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ART. I.—*Etiology of Hereditary Syphilis. Review of the Cases where the Paternal Influence is acknowledged, but the Mother is reported free from Disease.* By FREDERICK R. STURGIS, M. D., New York.

PART II.

IN my previous paper on this subject, published in the NEW YORK MEDICAL JOURNAL for July, 1871, I attempted to show by a series of cases, gathered from various sources, that, for a child to become syphilitic by inheritance, the mother must be diseased; but, were she to escape infection, it made no difference whether the father had syphilis, so far as the child itself was concerned. To put it in a few words: the semen is *per se* incapable of transmitting syphilis, I pointed out where the error lay in pronouncing the woman sound because nothing could be found upon her person, or because she denied having had the disease. I also noticed that in very many of the detailed cases the reporter seems to have been satisfied with the mother's statement of her health, or with the husband's avowal that she was quite well; in others, the woman was not seen at all; and in nearly, if not quite all, no mention is made of the woman having been examined, from which we are left to infer that she was not.

Such defective proofs as these should hardly be brought forward or accepted in support of the paternal influence in hereditary syphilis, when there are such strong and well-authenticated cases for the contrary belief. There is sufficient evidence to throw doubt upon the truth of the old doctrine, and my object in writing these articles is to show that, although the theory of the paternal influence *may*, perhaps, be correct, the proofs upon which it rests are defective, and that the belief which is so general upon the subject is based upon facts which are open to severe criticism. In selecting the cases for criticism I have copied from those whom I believe to be the best and most trustworthy defenders of this doctrine, from such men as Hutchinson of London, Langston Parker, of Birmingham, Diday, of Lyons, and others of equal weight. I shall report their cases in full, and then show in what respects they are defective as proofs of the point in question.

Mr. Hutchinson, in the second volume of the "London Hospital Reports," 1865, reports three cases where the children receive the taint from the father alone, the mother escaping infection. He gives in all eight cases; of these, five, or about sixty per cent., are born of parents who are both diseased. In the other three it remains to be seen how real the mother's good health was.

I. (page 182.)—"*A Child born Six Years after his Father contracted Syphilis, where the Latter had for long been free from Symptoms. Severe Disease in the Child. Progressive Improvement in the Younger Children.*

"Mr. D., a big, powerful Scotchman, presenting every appearance of the most robust health, brought me his eldest son, a thin, dwarfed starveling boy of fourteen, the utmost contrast to his father. The boy's tibiæ were covered with nodes, and he had nodes also on the bones of both forearms; his face was typically syphilitic, his corneæ were opaque, and his test teeth were deeply notched. On a subsequent occasion Mr. D. admitted that before marriage he had suffered from syphilis, but said he had soon got well and had remained so ever since. He has still some iritic adhesions in one eye. At later period Mrs. D. was also my patient, on account of a troublesome ozæna. She displayed no positive symptoms of syphilis, nor did she appear to have suffered from such. From her I obtained the following facts as to herself and her children: All the latter were brought for my inspection. We appear to have a good instance of the younger part of the family escaping the taint. Mrs. D. has nursed all her children, and, excepting 'debility,' has considered herself in good health.

"During her early pregnancies she repeatedly had aching pains in the left eye (eighteen years ago). Gradually she found that the sight with this eye was much impaired. She thinks it has been as bad as it is now for six years at least. She describes distressing pain in the brow and temple, occurring at times, and lasting a day or two, always in the left side. For many years she has been quite free from this frontal headache. Her eye was never visibly inflamed.

"The pupil of the defective eye (left) is smaller than the other, not half the size and decidedly smaller than natural, but quite round. With this eye she can only just make out No. 19, holding the book to one side and very near to her eye. There is nothing abnormal in the front parts of the eye.

"Mrs. D.'s family:

"1. A girl, stillborn.

"2. A girl, died at two years old, of scarlet fever.

"3. A boy, died, aged five weeks, of 'yellow jaundice.'

"4. Is our patient. The very type of syphilitic diathesis; keratitis, notched teeth, earthy complexion, and numerous nodes (now aged fourteen).

"5. A girl, aged twelve, well grown, but of slightly-marked syphilitic physiognomy. Upper central incisors notched, but not so deeply as her brother's. She has had keratitis, and in both eyes are extensive synechiæ. It is about a year since her eyes inflamed.

"6. A boy, aged ten, has perfect teeth of large size, good complexion. Has not suffered in his eyes.

"7. A girl, died, aged four, of whooping-cough.

"8. A boy, aged five, quite healthy.

"9. A boy, aged two, quite healthy."

Thus, out of nine children, only two show any thing which can be proved to be syphilitic (the fourth and fifth). Can the mother be looked upon as entirely healthy? True, neither the "*ozæna*" nor "*pain in the eye*" taken alone, is necessarily syphilitic, but considered together, with the fact that there has been extensive disease in the eye, renders it a question of doubt. Is it not likely the father infected the mother? Let us retrace our steps and inquire into the history. The child was born six years after the father contracted the disease.

(Page 182.) The boy is fourteen years old. It is twenty years, therefore, at the time the case was reported, since the father was infected. Eighteen years back, the mother, during her earlier pregnancies, had repeatedly "aching pains in the left eye, distressing pain in the brow and temple," etc. Were these symptoms due to iritis? Supposing it to have been that, the probability is in favor of it being syphilitic, because the husband had syphilis about the time of, and probably during marriage, and sixty per cent. of all cases of iritis occur in syphilitic persons.[1] He has had the disease twenty-five years, and has been married certainly eighteen, perhaps longer, for the wife's "*earlier pregnancies*" took place eighteen years ago. Whether the first or second we are not told, but, granting it to have been the first, we must allow one year for the woman to become pregnant in. They would have been married then nineteen years, and the husband would have contracted his disease only one year before marriage, perhaps not even as long. When did his iritis appear? before or during his marriage? Upon that point we have no positive evidence, but we can approximate to the time. Syphilitic iritis is one of the so-called transition symptoms between the secondary and tertiary stages, appearing as a tertiary as well as a secondary manifestation, and occurs from four months to two years and more after contagion.[2] Persons having iritis are not likely to have that and nothing more; they usually have mucous patches, eruptions, etc., in conjunction with it.[1] Is it so improbable to believe, then, that the husband had his iritis during his married life, together with other symptoms capable of infecting his wife? At any rate, although the evidence may not be strong enough to *prove* that the mother had syphilis, it is sufficiently so to cause doubt about her sound health, and whether the father was the only one of the parents who was diseased.

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[1] Bumstead, "Pathology and Treatment of Venereal Diseases," third edition, p. 660, 1870. Wecker, "Études Ophthal.," tome i., p. 894.

[2] Cf. Bazin, "Leçons Théoriques et Cliniques sur la Syphilis, et les Syphilides," p. 69, 1866. Bumstead, "Pathology and Treatment of Venereal Diseases," p. 666, 1870. Lancereaux, "Traité Historique et Pratique sur la Syphilis," p. 190, 1866. Geigel, "Geschichte, Pathologie u. Therapie d. Syphilis," p. 283, 1867.

II. (page 187.)—"*Case in Proof that Syphilis may be transmitted by a Father many Years after its Occurrence in Himself, and after his Apparent Restoration to Perfect Health.*

"The following case illustrates some very important laws in respect to the transmission of syphilis: 1. That the taint may be transmitted by the father only. 2. That it may be transmitted by a father who not only has no symptoms at the time, but who has been for seven years in good health. 3. That with the lapse of time such a taint dies out, and that the later offspring may escape any severe degree of contamination.

"Thomas J., a boy, aged thirteen, was brought to me at Moorfields, on March 19, 1863: he had syphilitic keratitis, characteristic physiognomy, and dwarfed teeth. I asked Mr. Dixon to see him, in order to verify my conclusions, and he quite agreed with me respecting them. The father of the lad came with him. He was a very robust-looking man; on inquiry, he gave me, with perfect candor, the following history: He had been married eighteen years, and was now forty-seven years of age; two years before he married he had a venereal sore, which was followed by a rash on the skin. 'It was hanging about him for a long time, five or six months at least.' When he married he was in perfect health, and has never since had a single symptom he could suspect of being venereal. I examined his tongue, the palms of his hands, etc., and could not find the slightest evidence of the diathesis.

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[1] Cf. Ricord, "Iconographie des Maladies Vénériennes," pp. 109, 117, 1862. Bumstead, *op. cit.*, p. 666.

His wife was in good health at the time he married her, and remained so afterward, except that she was weakened by bearing a large family very quickly. Her first was born a year after marriage, and died a few hours after birth. Thomas J., our patient, was the sixth born, and the eldest living. He suffered in infancy very severely from snuffles, rash, sores at the corners of his mouth, etc.; his parents did not expect to rear him. There are five younger ones living, two girls and three boys, all (excepting one) healthy, and none have suffered from infantile symptoms. The one exception is delicate, but nothing special ails him. The wife died two years ago from an abscess in the back.

"We must add that the boy was not an example of extreme cachexia. His teeth were not so deformed as we often see them. His growth was good, and he had a fair degree of coloration. After the outbreak in infancy, until incipient puberty, he had been quite free from symptoms, and had enjoyed good health. The attack of keratitis was, however, a sharp one, and exceedingly well characterized; his hearing was not affected at all. In proof that the taint was slowly diminishing in his parent, we have the fact that the younger children have all lived and have escaped symptoms in infancy. Of course, the fallacy remains that his mother may have contracted syphilis as well as his father, either before or after marriage. Such a conjecture is, however, wholly unsupported, while the health of the younger children makes it highly improbable.

"The truthfulness of the father's statement is confirmed by the fact that the elder children all died, and, after careful consideration of the whole history, I am also of opinion that there is little doubt that this boy was born some years after his father contracted the disease, and that he has inherited the taint from his father only.

"I will now mention another case in which the probability seems very great that the taint has persisted for two years in the parent's system with sufficient virulence to infect the offspring even at the end of that period.

III. (page 189.)—" *Rash, Condylomata, and the usual Symptoms, in an Infant born Two Years after the Disease in its Parent, and after other Children had shown it.*

"On January 18, 1865, Mrs. J. brought me her baby, a year old, with a large forehead, and condylomata around its anus. She said that when born it was healthy, but that at six weeks old it became covered with rash and had snuffles in the nose. This rash lasted three months, and was at length cured by taking powders. The condylomata had now existed for six months. Mrs. J. had been married two years, and her husband had been throughout in excellent health; excepting once for ague, he has never been under medical care since his marriage.

"The first child was dead-born, at full time (boy).

"The second died at a month old, 'covered with rash, and with its nose stopped up.'

"The third, a girl, never had any symptoms whatever. I saw her, now a healthy, clear-complexioned girl of six years.

"The fourth, still-born, a seven months' child.

"The fifth, a boy, now aged three, quite healthy-looking, and never had any special symptoms.

"The sixth, the baby above alluded to.

"The mother has had no special symptoms. She is ailing when pregnant. She now has a doubtful-looking sore in the lower lip, but it is not positively characteristic."

In these two cases several points occur at once for criticism, but in the first place let us examine case No. 2. This loses much of its value as proof, from the mother not having been seen at all; she has died. Mr. Hutchinson assumes, on the husband's word, that she had never had syphilis. That can hardly be adduced as evidence for these reasons. The disease frequently goes unsuspected and unnoticed; the husband could not and probably did not examine his wife to see if she showed symptoms, and, had he, he would perhaps have been none the wiser. Mr. Hutchinson himself says, "the fallacy remains that his mother may have contracted syphilis as well as his father, either before or after marriage," but he then goes on to say, "Such a conjecture is, however, wholly unsupported, while the good health of the younger children makes it highly improbable." Grant that the conjecture is wholly unsupported in the mother's case, yet the statement of her freedom is also wholly conjectural, and as for the good health of the younger children making it highly improbable, I beg leave to differ. A syphilitic woman *may* entirely recover from her disease and bear *healthy* children; in support of this view, I refer the reader to Dr. W. H. Van Buren's case in the first volume of the *American Journal of Syphilography and Dermatology*, and quoted in my former paper in this JOURNAL, July, 1871. That argument, therefore, loses a great deal of its force.

The opinion expressed that there is little doubt that "this boy was born seven years after his father contracted the disease, and he has inherited the taint from the father only," is somewhat startling. Here we have the extraordinary belief that a man may convey a disease from which he has seemingly entirely recovered for seven years, of which he has had no symptoms for that length of time, and to make it still more remarkable, the woman, although incapable of bearing other than diseased children, herself escapes harm.

In summing up case No. 3, Mr. Hutchinson states: "It is highly probable, in this case, that the infant inherits a syphilitic taint from its father, he having had the primary disease at least two years before its birth, and having, during most of that time, been free from symptoms."

In the history of the case, nothing is said about the man's disease; on the contrary, it is stated that he had enjoyed "excellent health."

Why, then, accuse him more than the woman of syphilis? He is to all appearances as innocent of disease as she. In fact, more so, for what is this "doubtful-looking sore in the lower lip, but which is not positively characteristic," which she carries? Accusing him of syphilis would seem to be an *arrière-pensée* to account for the child's condition.

In reviewing these three cases, I claim that the details given are not such as to prove the entire innocence from disease of the woman, and, until clearer and stronger evidence is adduced, belief in the doctrine of the paternal transmission alone of the disease must be suspended. Let us see if any other cases will support this belief.

MARTINEZ Y SANCHEZ. *Thèse de Paris*, 1855, p. 30. *The only one given of his own Observation.*

"M. X., a medical man, had, near the close of his studies, contracted an indurated chancre in the balano-preputial fold; this chancre was followed by a confluent roseola and rheumatoid pains, symptoms which were dissipated at the end of some weeks by means of an energetic mercurial treatment (pills of protoiodide of mercury, mercurial fumigations, etc.). M. X. returned to his country, and, believing himself radically cured, did not hesitate to marry. At that time nothing could make him believe the possibility of having a diseased child, inasmuch as he had not had the slightest sign of constitutional syphilis. Eighteen months had passed by since the disappearance of the roseola and his marriage. His young wife became *enceinte;* the pregnancy went on to full term, and the accouchement showing nothing special. But the child, contrary to the father's belief, showed, five days after birth, pustules which were decidedly syphilitic, together with an acute coryza. It died at the end of twelve days. The father, much alarmed at this accident, the true cause of which he suspected, recommenced an anti-venereal treatment (liqueur de Van Swieten every evening), and continued it for two months. His hopes were not disappointed; he had a second child, strong and healthy, which up to the present time has shown nothing doubtful or abnormal."

There are, unfortunately, no means of judging of the length of time which had elapsed between the birth of the second child and the reporting of the case. The man's history is tolerably full, but the wife's is totally ignored; we are not even told if she is a healthy woman. Was he the only one treated, or, as frequently occurs in such cases, was she also included? The silence on her condition is much to be regretted, inasmuch as having the reports of cases where the disease of the mother is coincident with that of the children, and *vice versa*, it leads to the suspicion that the disease in the woman was ignored, or else overlooked. We are not told how soon, after the second treatment had been instituted, the second child was born. This is of some importance as regards the mother, for, if it were some while after, there was time, supposing the mother to have been infected, for her recovery, and hence the second child being born healthy. At all events, the case is lacking in such important details as to render it of comparatively little value in proving the point M. Sanchez wishes to.

VON BÄRENSPRUNG'S CASES. *Die Hereditäre Syphilis*, p. 87.

Out of ninety-nine cases reported by him, only two occur where the father was under the influence of the disease at the time of marriage, and during the wife's conception, where the children were not carried to full time, or were syphilitic at birth, and where the mother was *apparently* free from the disease. I say *apparently*, because, in reviewing the cases, we shall see if such was really the fact.

CASE I.—Six months before marriage, the man contracted an indurated chancre on the penis, for which he was treated by pills of protoiodide of mercury. Fourteen days before marriage, the following symptoms made their appearance: mucous patches on the tonsils, alopecia, and a papular eruption over the body. At his marriage, he still had these symptoms. He was treated by Zittman's decoction, and got well. His wife became pregnant soon after marriage, and was delivered of a six months' child, which lived only a few hours. It showed no marks of syphilis. Her health all this time was excellent, only that, a short time before the child was born, she had a slight scaly eruption on the scalp, and lost, not the hair of her head alone, but her eyebrows and eyelashes. She was examined, and, with the exception of the symptoms noted above, she had no signs of syphilis. The eruption was regarded as eczematous, and she was put upon decoc. sarsaparillæ c. senna internally, and unguent. hydrarg. præc. alb. externally, with simple diet. Under this course she recovered. A year and a half after her first confinement, she became pregnant again, and during the second half of her pregnancy the eruption and alopecia returned. She was delivered of an eight months' child, still-born, but well formed and free from syphilitic symptoms. He then goes on to say: "After a very careful examination of the whole body, I found nothing more than I found before, little spots covered with scales between the roots of the hair on the head; not a trace of glandular swelling nor any other symptom of syphilis. The *embonpoint* was good, complexion fresh; the growth of the hair was strong, although the patient had herself noticed a falling out of the hair of the head, the eyelashes, and eyebrows. I advised the use of salt-water baths for husband and wife. On the 2d of October, 1862 (i. e., seven months afterward), I was again consulted, the salt-water baths had not been attended with much success; the squamous eruption on the scalp was more pronounced, and some aphthous erosions were present upon the sides of the tongue; her general appearance was as good as ever. The husband was free from all symptoms."

Was this eruption really nothing but eczema, and what were the aphthous patches on the side of the tongue? Were they also eczematous? The first time she had these symptoms they disappeared more rapidly than subsequently, but at that time she was using a preparation of mercury, which was not continued afterward, and it must be remembered that the earlier syphilitic eruptions disappear more rapidly than the later ones. Suppose these symptoms were nothing else than eczema, what evidence is there that the children were syphilitic? Nothing, beyond the fact that they were prematurely born. That alone is not a sufficient evidence of hereditary syphilis, for non-syphilitic women also give birth to children prematurely. Thus, one of two things from the history—either the mother was really free from the disease, and the premature birth of the children was not due to syphilis, or else both were syphilitic.

CASE II.—In this case, the father was not seen at all; it is stated that he was subject to ulcers on the legs and feet; whether due to syphilis or not is not known. No traces of syphilis found on the mother. The child was still-born and syphilitic.

As, in this case, one parent cannot be accused more than the other, it can scarcely be accepted as proving either side of the argument.

CAMPBELL'S CASE.—*London and Edinburgh Monthly Journal, for* 1844, p. 514.

"A young medical man, six months before marriage, contracted a chancre. No subsequent symptoms. The wife presented no symptoms of syphilis, but had three miscarriages. (The condition of the children is not stated.) Both were put upon mercurial treatment, when the wife for the fourth time became pregnant, and was delivered at full term, of a child who lived without having syphilis. The length of time it lived is not given. Aside from the scanty details of the history, these points occur at once for criticism: Was the husband's chancre a simple one (chancroid) or was it a primary lesion (indurated chancre)? Probably it was the former, for syphilis does not remain latent for six months, or longer, as seems probable in this case, without showing itself in some way. Miscarriages alone are not enough evidence that syphilis is the determining cause. It may be objected that after the use of mercury the miscarriages ceased. True; but what does that prove? It is no evidence that they were due to syphilis, for it is very possible that the same result might have been attained without its use. One more point: in 1823, when this case occurred, the distinction between the simple and specific ulcers was not recognized, and both were called indiscriminately syphilis. I should not have quoted this case at all, but for the fact that Vidal, in his "Thèse pour l'Agrégation," brought it forward to support the theory of the paternal transmission. It seems to me erroneous to consider it a case of syphilis at all in either parent, for the history of the disease is wanting in father, mother, and children, and the only points on which the idea is based are the father's sore, the mother's miscarriages, and their cessation after the use of mercurials, neither of which alone or together is sufficient to establish the diagnosis.

LANGSTON PARKER'S CASES.—*Modern Treatment of Syphilitic Diseases*, p. 297.

This gentleman records two cases, and I shall copy them in full, that they may speak for themselves:

CASE I.—"In August, 1852, I treated a patient for a well marked attack of syphilitic lepra. The symptoms disappeared under the treatment, which was not very protracted nor was it regularly followed. In 1854, this patient married a healthy looking young woman, who in 1855 was prematurely delivered of a dead child. In 1856 she was delivered, at her full time, of an infant, which appeared well and hearty for three weeks. It then began to 'snuffle,' then had puckering of and a dry eruption about the mouth, and two large vesicles resembling pemphigus on the thigh and on the side. The child was treated by mercurial inunction on flannel bandages round the knees, and cured."

Mr. Parker then goes on to say: "In this case, the father remains without symptoms of syphilis for more than three years, yet the disease breaks out in the offspring. Mark what takes place on the part of the mother in the mean time: the premature birth of a dead infant, and a diseased living child cured by mercurials.

"The father during this interval has had no symptom of syphilis; the mother never had any in her life; the ova suffer, and doubtless by impregnation with diseased semen." From the history we have learned nothing about the mother's condition, and we are glad to be told in the summing up of the case that she had never had syphilis. Whether this was known by examination, or merely by what the husband and wife said, is left for us to guess at. The husband, we are told, has had "no symptoms for more than three years, and yet the disease breaks out in his offspring." But at the time of his marriage he had not been well so long as three years; it was only two. At that time he had "a well-marked attack of syphilitic lepra." What was this lepra? was it psoriasis? and was this the only symptom he had? The treatment was irregularly followed out and not protracted; is it not, therefore, probable that he had symptoms subsequent to his "lepra?" He was not seen at the time of his marriage; how are we to know that he did not at that time have symptoms capable of conveying the disease?

Case II.—"A. B. was treated by me in the Queen's Hospital for a pustular syphilitic disease of the skin, of a very formidable character. The symptoms disappeared under the treatment employed. While he was in the hospital, his wife brought her infant to me, covered with scaly blotches. The child was plump and apparently healthy when born, but a few weeks afterward the patches broke out and the health began to decline. The mother had no symptom of disease; her breasts, as well as the infant's mouth, were free from ulceration. She was extremely anxious to be examined, fearing she might be laboring under some disease of the parts themselves. I instituted the most careful examination with the speculum, not only once, but four or five times, and could never discover the least local disease. The child in this instance was alone treated and cured. I purposely abstained from treating the mother, whom I watched for nearly two years. She has never suffered from syphilis in any form."

What a very bald history of syphilis in the child; scaly blotches on the body and a decline of the health! Not a word about coryza or mucous patches. The mouth, however, was found free from ulceration. Is that of common occurrence in syphilitic children? Are scaly blotches on the body, without other symptoms, sufficient to establish the diagnosis of hereditary syphilis? Does not eczema attack infants, and is not the disease one which in its course becomes scaly? All these facts would go strongly against the supposition of the child's eruption being due to syphilis.

LANGSTON PARKER.—*The Mercurial Vapor-Bath*, p. 43.

"A young gentleman and lady married, with all the prospects of future happiness that fortune and apparent health could give. In due course the lady became pregnant, but miscarried. The same things happened in her second and third pregnancies; a good deal of mental uneasiness was produced, and some suspicions arose. The fourth child was born alive, but at six weeks old had snuffling and the eyes became bad; condylomata also appeared about the anus. A neighboring physician of great local eminence was consulted, who said rather abruptly, 'The child is diseased.' The parents, as may naturally be supposed, were shocked and horrified beyond measure, the father having at a remote period before his marriage been affected with syphilis; but the mother had never exhibited the least symptom of the disease. He was put upon a course of blue pill and iodide of potassium; the mother at first was not treated. A fifth child was born, who at the end of the first month had symptoms of syphilis. The father was again only treated, and a sixth child was again born diseased. The mother was again examined, but no trace of the disease could be found in the throat, vagina, uterus, or elsewhere. The patients were now placed under my care; I recommended that both should be treated by a full course of mercurial vapor, and that no intercourse should take place during that period.

"The seventh child was born healthy, and has remained so, and neither father nor mother has as yet exhibited any further symptoms of disease.

"This case illustrates one or two very important points in the treatment of syphilis: 1. It establishes the law, which should always be acted on, that, in the event of two married persons, apparently healthy, having a diseased child born to them, both should be treated, although the mother has never shown the least trace of the disease. 2. It shows the efficacy of the mercurial-vapor treatment after the failure of several of the ordinary methods. It is true, an exception might be taken to this, since the mother was never treated till the mercurial vapor-bath was used; but, on the other hand, it is hardly probable that the father could have been cured by the previous treatment, or he would not have continued to procreate diseased children."

And is it not also singular that, despite the treatment the father goes through when he alone is treated, the children continue diseased, but, the moment the mother is included, the next child is born healthy, if the blame rest upon him alone?

Mr. Parker was undoubtedly right in putting the mother under treatment also, inasmuch as she probably was as much at fault as the father for the unhealthy condition of the children. But, if she was, as he believes her to have been, blameless, of what use putting her upon treatment at all? It was not until after the birth of the fourth child, that the parents were examined, and it is not such a matter of wonder that after four years, at the least, nothing was found upon the mother indicative of syphilis. I am assuming that she *was* examined at that time (although it is not so stated), from it being said that, after the sixth child was born diseased, "the mother was *again* examined." The father's history is very loose, "having at a remote period before his marriage been affected with syphilis." How remote; and did he have no symptoms during his married life? The repeated births of so many syphilitic children, their continuance after the father has been subjected to two successive courses of treatment, and their final cessation only after the mother has been treated also, should tend to awaken doubt as to whether the father was alone the cause. Nay, more, there is strong presumptive proof that the fault lay with the mother. These cases are like too many of their kind, very loose and careless in their details—too much so to admit of a scientific value. And, as if for the express purpose of contradicting himself in the belief that "syphilitic semen" can disease the ovum and its product, and leave the mother free, Mr. Parker reports two cases on the next page, where the fathers were infected with syphilis, in the one case apparent, in the other latent, and yet the mothers, and the children born to them, show no signs of the disease. How are these statements to be reconciled? Mr. Parker does not seem to attempt to do so; he merely states the fact.

On looking over the reported cases, one thing will, I think, strike every one, viz., the vague and unsatisfactory manner in which they are reported. Compare them with those given in the first paper on this subject, where it was argued that syphilitic transmission depended upon the mother, not upon the father, and, where the former was healthy, the children would not be infected. The difference in the way in which they are detailed is apparent; the one set being clear and logical, the other careless and unsatisfactory. Then, again, even the advocates of the theory of transmission by the father give cases where the father is diseased at the time of impregnation, but the mother is not contaminated. Yet the children grow up sound and well, whereas, were the doctrine of paternal transmission true, they should have been syphilitic. How is this discrepancy explained; why should such opposite results ensue from similar causes? Diday (*op. cit.*) says, and I quote him as he is one of the principal exponents of this theory: "The father, in fact, is very rarely affected with the disease *without communicating it to the mother before or during pregnancy*. . . . However, despite these inherent difficulties in establishing the paternal influence, there are few specialists who have not been able to do so" (p. 15). He then adduces cases from various authors, none of which are convincing, and proceeds to give a case of his own. A man has syphilitic symptoms both before and after his wife's impregnation; she escapes; the child is born at full term—syphilitic? The contrary; for the two years it was under observation it showed no symptoms of syphilis (p. 17). And this is the way in which he explains it: "It seems natural to admit that a diathesis which does not yet manifest itself, or no longer manifests itself by sensible effects, should be less marked, and consequently less capable of transmission than one of which the symptoms are actually present."

Very good, M. Diday, and now, for "*less capable* of transmission," etc., read "*incapable of transmission*," and there stop. Have we not already proof of the fact in the cases collated in the first paper; do we not know that contact beneath the skin with diseased secretions is all that is necessary to produce the disease, and, if the doctrine be true that semen is a diseased secretion, how do some mothers and children escape? Would they be so fortunate if the secretion of a primary lesion or a mucous patch were substituted for the seminal fluid?

Before concluding this article, I cannot refrain from quoting Mr. Berkeley Hill, of London. This gentleman says: "The transmission of syphilis from father to child is an accident of frequent occurrence, when the mother also participates in the infection before or during pregnancy. In such cases it is impossible to say the virus does not reach the child directly through the mother, and only indirectly through the father. It is also believed that the child can inherit the disease direct from the father, while the mother remains intact. The evidence in support of this view is at present imperfect, because syphilis in women often causes so little inconvenience, that its presence passes unnoticed. . . Diday ("Infantile Syphilis," p. 15, *et seq.*) and Lancereaux ("Traité de la Syphilis," p. 653) have collected the authorities whose observations support this theory, but they do not decide the question. In all, the escape of the mother is inferred from the absence of symptoms of syphilis sufficiently prominent to attract her attention.

"For an example of the kind of cases brought to prove this theory, Trousseau (*l'Union Médicale*, 1857), in a clinical lecture on syphilis in young children, relates that a patient with syphilitic laryngitis told him that his wife, though always in excellent health, had been pregnant six times, but her children were all born prematurely, some of them being marked with blotches on the skin. Trousseau had no opportunity of examining the mother himself, and the health of both parents, excepting the laryngitis of the father, is not stated. It is not clear that the mother escaped disease; on the contrary, the continued abortions are strong presumptive reasons that she had syphilitic disease of the womb, which prevented maturation of the ovum. . . .

"Even if syphilis be not in active progress in the father, it is held by many that the ovum may receive syphilis with the semen. This is an extremely uncertain point, and must await further investigation." ("Syphilis and Local Contagious Disorders," p. 32, *et seq.*)

ADDENDA.

Since the first of these two papers was written, my friend Dr. E. S. Dunster, of this city, has kindly sent me the record of two cases occurring in his own practice, but which arrived too late for insertion where they properly belong. They show proof in favor of the doctrine of the paternal non-transmissibility of syphilis, and are here recorded as Dr. Dunster gave them:

Case I.—"A. B., forty-seven years of age, contracted syphilis in 1854. Was treated pretty largely, but disease passed into constitutional form, well marked. Married in 1859. Wife perfectly healthy, and has remained so to date. Five children have been born. First (boy), in 1860; second (boy), in 1862; third (boy), in 1865; fourth (girl), in 1867; fifth (girl), in 1869. All these children are living and are perfectly healthy, well developed, and robust. No symptoms either of syphilis or scrofula. Two years I have been physician to the family, and know them all very well. The father, for about four years past, has been a frequent sufferer from nodes and neuralgia. Was very heavily and repeatedly mercurialized before he came into my hands. He is compelled almost constantly to take iodide of potassium in large doses, which keeps his pains in abeyance. His general health otherwise is good. Has had no mucous patches since he has been under my care. Uses tobacco by chewing only."

CASE II.—"C. D., thirty-six years of age, contracted syphilis in the spring of 1862. Had but slight treatment. Married in 1863. Wife perfectly healthy. Had three children. First born in 1865; second born in 1867; third born in 1870. No miscarriages. Second child died in 1868 of cholera infantum. The other two are perfectly healthy. No traces either in teeth, skin, mucous membranes, osseous or lymphatic system, of the disease. The father has had roseola, mucous patches, nodes on one tibia, one clavicle, one ulna, and slight engorgement of one epididymis of one testicle. Is a great smoker, and has occasional mucous patches which yield readily to the iodide. This is the only symptom now for several years. This case was under my observation at the time of the original lesion, and during most of the time since then the treatment has been directed by myself."

These two cases are well and fully reported, including the history of father, mother, and children, and certainly seem conclusive. The other case in favor of the paternal transmission is one occurring in the practice of Dr. Kennard, of St. Louis, Mo., and is copied from the sixth volume of the "Medical Archives:"

"*April* 12, 1870.—I was called to see an infant aged four weeks, in the southern portion of St. Louis, which three days after birth began to manifest symptoms of hereditary syphilis, such as cutaneous eruptions, superficial ulcerations of the mucous membranes, and that general appearance of exhaustion peculiar to those cases, where venereal disease has been transmitted from the parent to the fœtus, in the act of impregnation. Different from most cases of the kind, which, if born free from external symptoms of infection, generally remain so for three or four weeks, the child during that time appearing plump, with a smooth skin, this child, on the third day after birth, began to be covered with an eruption so rapidly that the mother and all the neighbors became alarmed, and concluded that the child had the small-pox, and a so-called M. D., who was summoned to the case, confirmed their suspicions by stating that it was an awful case of *hereditary small-pox*, and most undoubtedly originated from the poison of variola, still lurking in the mother's system. He treated the case for small-pox for more than three weeks, when, no improvement occurring, but a gradual change for the worse alarming the mother, I was requested to see it. As incomprehensible as it may seem, this child, which had for more than three weeks been treated for hereditary variola, was born of a mother whom I had treated for small-pox two years previously, and whose face was badly pitted; so that, if such a thing were possible as hereditary small-pox, her history alone would have precluded all possibility of such a thing. It presented one of the most typical cases of infantile syphilis that I ever saw. The child had that characteristic look of a little debilitated old woman; the skin was wrinkled and loose, hanging in little folds to its emaciated form, and of a muddy, dirty, dead-leaf color, especially on the chin, forehead, and buttocks. There were chaps and cracks around the mouth, nares, and eyes, and a great portion of the body was covered with scabs, resulting from the bullæ of pemphigus; the nostrils were nearly closed, and consequently snuffling was very troublesome. There were great fretfulness and marked insomnia; the voice was weak, hoarse, and characteristic, and that indescribable odor peculiar to this disease was very marked; vomiting and diarrhœa were both very troublesome.

"The peculiar cough which accompanies bronchitis in these cases was very harassing, and in fact the child looked as though the ordinary termination of such severe cases, death, would soon and inevitably bring its sufferings to a close. It was not only in an extreme state of debility from the influence of the poison in its blood, but the plugging of the nares was so complete as to seriously inconvenience the child in nursing, and thus prevent its proper nutrition. It had three diseased nails on one hand and two on the other, and also three on each foot. They were abnormally thickened, yellow, dried up, and soon became detached.

"The sanio-purulent discharge from the nose, after the scabs obstructing the nares had been removed, was profuse and offensive, and there were troublesome follicular ulcerations and cracks on the inner portion of the alæ nasi, which easily gave rise to slight hæmorrhage. The characteristic stridulous, squeaking, scarcely-audible cry, showed that the larynx was implicated, while the obstinate cough and impeded respiration proved that there was trouble in the lungs. The symptoms of bronchitis were indeed alarming.

"The eruption was composed of dark, purplish-red patches, papular in appearance, slightly elevated above the natural surface, and the cuticle over them raised into blisters, filled with a yellowish-green fluid, which soon escaped, mixed with blood and dried into scabs; under many of the scabs ulceration occurred. Mucous patches around the anus, on the perinæum and vulva, were very numerous, in the form of pinkish, elevated spots, moist, but soon began to dry and disappear under treatment. The eruption was a mixed, pustulo-papular one, with considerable amount of exudation, which formed into hard scabs, firmly adherent to the adjacent derma, and upon their detachment sluggish ulcers were found underlying them. Such are the details of the appearance of this case as first seen by me." . . .

The peculiarities and points of most interest in this case were:

"1. The possibility of a father procreating a child so seriously diseased, when the only mode of communicating the syphilitic poison was through his semen, and at a time when the poison in his system manifested no activity whatever, proving that the poison may be transmitted to the offspring at any period of the constitutional disease, and when it is latent in the parent.

"2. The strange fact that a non-syphilized mother could nourish and bear to full term such a grievously-afflicted child, and yet escape contamination herself, both then and while continually nourishing it. . . .

"*This case furnishes an undoubted instance of the indirect transmission of syphilis by a diseased father, while the non-syphilized mother remained uninfected*, proving that the poison reached the child directly, and only through the impure semen of the father, and that neither the diseased child nor the father communicated it to the mother (a fact the possibility of which is generally denied); and that the ovum became contaminated from the semen of the father when syphilitic disease was at the time in abeyance in his system. The inherited disease, as a rule, is more or less severe in the child in proportion to the virulence of the disease in the parent communicating the same, and the time which has elapsed since syphilitic symptoms were manifested in him or her, or in both, but it may be communicated at any stage from six months to twenty years after the empoisonment, and some contend that it can be transmitted *to the third generation*."

Dr. Kennard's case is one certainly difficult to question, from the care with which it is reported. In reply to a note of inquiry I wrote him, he says: "I have purposely delayed answering your kind letter of inquiry, because I thought it would be much more satisfactory to you for me to examine the mother once more before doing so. She had been a patient of mine some years previous to the birth of the child, whose case was reported in the 'Medical Archives,' and been thoroughly examined by me on several occasions with the speculum, and otherwise, and never at any time did I detect any sign of venereal disease whatever. During the treatment of the child and since, she was repeatedly examined and most assuredly manifested no symptoms of syphilis at all. She is now in very robust health and most positively declares that she never had any venereal disease."

Only two things are needed to make Dr. Kennard's paper perfect: a history of previous births, if any, or of miscarriages; and a history of the father's disease. It is only by implication, and seemingly not from actual knowledge, that he is assigned as the cause of the child's disease.

Suppose, now, on questioning him, that he should deny ever having had the disease, to whom should we refer the child's illness? Perhaps the raising such objections may be regarded as quibbling; such is, by no means, my intention.

The reason why I express these doubts is, that this doctrine of paternal transmission has been questioned and denied by many competent authorities and upon pretty good grounds; better by far than those adduced by the adherents and believers in the old theory. To disprove their assertions we must have better arguments than we now possess. The cases on the side of the paternal non-transmissibility are fuller, clearer, and more convincing than they are on the other; and, although this case of Dr. Kennard's, and the one of Ricord, are the best of any reported, they fail of being convincing. To be so, they should be exact in the details of both parents; if any thing is left doubtful or questionable, their value is lessened. For that reason I have left out those cases which I have seen, because I had unfortunately kept no record of them, and could not, therefore, speak positively about them. This much I remember was strongly impressed upon my mind: in all my cases I have been able to trace the disease, past or present, back to the mother, and in other cases, where, upon examination, the father was diseased, the mother healthy, and the child *reported* syphilitic, I have, on inspection of this latter, been able to diagnosticate some simple eruption, such as eczema or the like.

Although I do not say absolutely that the paternal transmission is *impossible*, I do not hesitate to say that it is *very improbable*, and on these grounds:

1. Because the reported cases are wanting in such details as to render them convincing.
2. Because this theory is entirely opposed to our present knowledge of the contagious properties of syphilis and its mode of propagation; and—
3. Because our knowledge of infantile syphilis has not kept pace with our progress in the other branches of the disease.

Here is really the way in which the proposition stands: Both sides grant the contagious properties of a primary lesion and of mucous patches; one side further argues that the semen of a person in whom the disease is either present or latent is also capable of conveying the poison; the other side demurs, and offers as proof against this argument the fact that many cases exist where the syphilitic father has perfectly healthy children, and in this connection the mother is found free from disease. The first side say this is possible, and go further yet: notwithstanding that this poison is eminently virulent and dangerous for those previously free from its influence, they insist that a perfectly healthy woman may and does receive this poisoned semen into her body, a diseased fœtus is carried by her for the nine months of intra-uterine life (the relations between the two being of the most intimate character for that length of time), she nourishes this rotten product, which, when born, may become a centre of contagion to those about it, and yet escapes contagion. If this be true, then one of two things: either we are ignorant of the real condition of the mother, or else syphilis is not the contagious disease which we have been accustomed to consider it.

I myself believe it is, the former, and showed, in the first paper, the why and wherefore of my belief.

What I now wish to urge is new and independent observations. Both the parents and the children should be examined and watched for some time before we may conclude one way or the other, but above all things let us cease copying old and poorly-reported cases, and observe anew for ourselves. In this way only can we hope to arrive at some definite conclusions upon this important subject.

ART. II.—*Varicocele and its Radical Cure.*[1] By OCTAVIUS A. WHITE, A. M., M. D., of New York.

CONSERVATISM is the order of the day. Actuated by this potent spirit, modern surgery wisely repudiates active interference in every case which cannot be positively ameliorated by the power of art.

Operative procedures for the relief of physical infirmity at the present day are, therefore, reserved for cases in which demand for assistance is peremptory, the tendency is to aggravation, and, above all, in which every other known mode of rational treatment has been resorted to without avail. Thus surgery often becomes the final resort when therapeutics fails to give relief. In our limited knowledge of diseases and remedies, necessity, therefore, must often arise for the stern application of the knife; and it becomes us to be ever ready to institute with promptness the perfection of our art to arrest damage and alleviate suffering.

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[1] Read before the Medical Society of the County of New York, May 26, 1873.

Among the host of maladies recognized by the earliest surgeons, to remedy which has ever presented a most difficult problem, none can take precedence of that grave affection formerly denominated *cirsocele*, but more familiarly known to modern surgeons as *varicocele*. As the scrotal veins themselves, however, are liable, though rarely, to take on a varicose condition, it would be better in future to reserve the former title to distinguish this alone, and employ the latter to signify only varix of the spermatic veins.

Search, we believe, will be made in vain for a single authentic case of mitigation, far less cure, of varicocele, by any other than strictly surgical means. It was this conviction which long since caused Pott reluctantly to admit that "no good effects can ever be derived from external applications of any kind."

The ingenious and plausible devices of Wormald and of Richard, and more recently that of Mr. Morgan, of Dublin, exist indeed, but are now regarded only as evidences of what has been so laudably and earnestly attempted in this direction.

The vast variety of heroic measures devised from time to time, and the astonishing alacrity with which the afflicted have submitted to these severe procedures, alike manifest the earnest demand for some form of radical relief.

So great has been the amount of suffering already inflicted, for the amelioration of this hapless infirmity, under the guise of surgery, that we would far rather toy in future with such mechanical and therapeutical means as propose to moderate discomfort and lessen pain, than rehearse an old or attempt a new plan of active treatment not consistent with assurances of permanent cure.

If we consider the various anatomical or other causes which conspire to develop and confirm this malady, apart from sexual abuses, which never fail to intensify it, we must inevitably be impressed with the conviction that no reliance can be placed upon therapeutical agents, however skilfully and diligently applied.

Indeed, the severity of the affection is most commonly increased by attempts to stimulate the flagging virile powers by means of drugs; and the momentary fillip to the system which these afford, as Todd so well observes, is almost sure to be succeeded by a correspondingly profound and perhaps irretrievable depression.

Moreover, so far from Nature, as usual, lending her accustomed aid in the direction of repair, each case seems to possess its own inherent tendency to grow worse until physical torment and mental inquietude forbid further temporizing, and incontinently demand relief at the hazard of life itself.

Though daily experience justifies these assertions, medical men can, even at this very juncture, be found attempting to conduct cases of varicocele to a favorable issue, without invoking the very necessary aid of surgery.

The intimate dependence of the intellectual upon the vigor of the generative functions, is a fact long since and most fully established. Copulation is not under the power of volition; "though an act of the body," says the philosophic Hunter, "its spring is in the mind." The human fabric is subject to no class of diseases which preys more mischievously upon the intellect than those affecting the integrity of the procreative organs. "Our lunatic asylums," testifies the experienced M. Gascoyen,[1] "afford but too many examples of mental derangement in persons who have been addicted to masturbation and sexual excess, the former more particularly, to leave much doubt that those practices may produce cerebral disturbance."

Sometimes, indeed, even early in life, the mental faculties fail; but, should a naturally vigorous constitution preserve the individual a few years longer, depreciation in this respect, unless relieved, is almost sure to overtake him and become definitely fixed at or about the fortieth year.

We are forcibly reminded, in this connection, of the sad and unmerited fate of the distinguished Delpech, who lost his life by the hands of a patient upon whom he had operated for a double varicocele. The testicles of the assassin were found wasted away, and his mind was possessed with the conviction that the surgeon had caused it.

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[1] *Vide* "Transactions of the Harviean Society," December 7, 1871. Gascoyen, Surgeon to Lock Hospital.

The fact is well established, among surgeons of the present day, that this morbid condition, if abandoned to take its own course unchecked, may, and too often does, lead in itself to virtual castration. Irremediable atrophy has frequently resulted thus to testicles from the *smothering process*, induced naturally by such overspreading of the veins.

Landouzy, from his ample field of observation, has declared he could trace no connection between varicocele and hæmorrhoids or varix elsewhere, an assertion which accords with our own experience. Nevertheless, we record the high authority of Mr. Curling to the contrary.

We have but recently witnessed a most melancholy case of old-standing varicocele in an individual not yet forty years of age. Amid the exaggerated congeries of veins on both sides, only the merest trace of testicles exists. The mental and physical condition of this wretched individual, though presenting varicose veins in no other part of his person, is so very seriously deteriorated as to incapacitate him for all useful occupation.

The tumor always intensifies during the day in the upright and subsides again at night in the recumbent posture, communicating commonly so decided a succussion in the act of coughing as at times to delay immediate diagnosis, and cases complicated with other scrotal difficulties have been described, which puzzled the skill even of experts. Two remarkable cases occurred in the practice of Mr. Bransby Cooper. In one the disease was marked by hydrocele of the cord, in the other an infarcted state of the bowel caused him to mistake the tumor for a strangulated hernia, until the action of a purge dispelled the illusion.

Cases are constantly presented which have been subjected, and vastly to their detriment, to a hernia-truss, in consequence of mistaken diagnosis. Imbued, however, with proper knowledge and skill, the true nature of any such morbid mass may shortly and finally be recognized, since, at the present day, our means for definitely distinguishing varicocele from kindred maladies are more complete.

Varicocele being essentially a varix in its nature, of course every procedure which has been found useful in the treatment of varix in general has been most diligently and faithfully instituted in this. To recapitulate, briefly, the most prominent efforts which from time to time have been made at radical relief cannot fail to interest, since it impresses forcibly not only the intolerable and refractory character of the complaint, but illustrates the resolute and industrious pursuit after remedy by surgeons. Such a glance will also serve to prove what little true progress, in spite of all effort, has been insured in the way of radical relief, and the noted degree in which plans claimed as novelties resembled long-neglected attempts of earlier surgeons.

The rude surgery of the time of Celsus naturally could devise no less hideous a remedy than castration—a resort which not only Boyer countenanced, but which Gooch and others, and even more modern surgeons, have practised.

Nélaton actually revived the free use of chemical caustics, a mode of treatment which had justly passed into desuetude since the time of Paul of Ægina.

Davat, Franc, Reynaud, and even Jobert, inclined to modifications of Paré's original method of laying bare the sac, and ligating the veins.

The equally bold proceedings of Crumano, Delpech, Rima, and Moulinié, all resembled each other.

Bell taught a tedious process of applying ligatures to each vein separately. Genius must necessarily command disciples, and Kuh, of Geneva, and others, have imitated him.

Fricke's method, by setons through the veins to obliterate by plastic exudation, is but a repetition of ancient results in surgery for aneurismal varix, its chief merit being its antiquity.

The plausible and ingenious plan of Buschet captivated, among others, the discreet Chelius. The pincers, which forms the chief feature of the operation, is clearly modelled after Dupuytren's *enterotome.*

Landouzy's and Samson's methods are each identical with M. Breschet's improvement in the character of the pincers, creating scarcely a shade of difference.

Graefe, Amussat, Dr. Jamison, of Baltimore, and Dr. Stephen Brown, of this city, each essayed, in defiance of Sir Astley Cooper's noted experiments, to abolish varicocele by ligating the nutrient artery itself. The uniform result, of course, was failure, with even, in some cases, sloughing of the testicle.

Sir Astley Cooper, who so wisely deprecated temporizing with the rings of Wormald, recommended and practised actual excision of part of the scrotum, as a means of radical cure—a procedure which, according to Bransby Cooper, and other surgeons of his day, afforded no lasting advantage.

We heartily concur with Mr. Barwell, of Charing Cross Hospital,[1] in censuring as unnecessarily violent the plan by double ligature and subcutaneous division of the veins, of Mr. Lee, though it did originate with Sir Benjamin Brodie. Even yet, however, we find Mr. Bryant, of Guy's, and Mr. Sidney Jones, of St. Thomas's, announcing cures effected by this heroic means.

The ingenious procedures of Gerdy with hernia naturally hinted to M. Lehmann his scheme of invaginating the scrotum into the belly in order to curtail the latitude of the distended veins. This effort, however, succeeded no better than Mr. Cooper's plan, and, lacking the same exalted prestige, exists now only as an historical fact.

If, as Gottschalk[2] has so fully demonstrated, the simultaneous, immediate, and complete occlusion of the veins at fault were not a prime condition to successful obliteration of all cases of varix, M. Vidal's last and certainly ingenious method by "*enroulement*" would not perhaps disappoint those who rely upon it so often for relief.

So might we greatly extend this record of disappointment; but our purpose is not to compile a catalogue of the great and needless suffering inflicted to control this infirmity.

The plan of M. Ricord, which has afforded good results in the hands of so many surgeons, and which, until a comparatively recent date, has been our own resort in the treatment of varicocele, has, we find, in the course of our investigations, fallen less into disfavor than any other hitherto proposed. Nevertheless we note quite a number of cases operated upon by this method, which resulted fatally, either from erysipelas, phlebitis, tetanus, or pyæmia; each of which accidents, consequent upon operation, doubtless arose from the irritating properties of the organic ligatures employed.

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[1] *Lancet*, No. 21, vol. i., 1869, p. 711.

[2] Oppenheim, Zeitschrift für die gesammte Medicin, vol. xxii., part ii.

To obviate as far as possible the ordinary dangers, embarrassments, and disappointments, incident to radical cure of varicocele, we devised and have practised the following safe, simple, cleanly, and expeditious method:

A sufficient amount of experience in diseases of the genito-urinary organs, with quite a large number of most aggravated cases of this particular malady successfully operated upon, fully justifies us in recommending this plan of procedure as one eminently worthy of trial.

Mr. Redfern Davies,[1] of Birmingham, describes, in the *Lancet*, a case of varicocele operated upon successfully, in which he applied wire ligatures to the veins, after Ricord's plan, but inconsiderately omitted to provide for their subsequent removal after the cure had been effected. He was compelled reluctantly, therefore, to abandon within the scrotum the metallic knot he had thus so securely adjusted around the morbid veins.

Such a case as this alone, though others can be adduced, proves beyond doubt the inocuity of metallic sutures in operations about the scrotum, and, since their employment is in strict accordance with modern surgery, no improvements in this regard can possibly be needed.

However unnecessary it may be in many other surgical operations to subject patients to preparation, we believe, with Mr. Bransby Cooper, such course particularly required in these cases.

In proceeding to institute any operation about the sac requiring the passage of needles, the wise counsels of the experienced Velpeau can never be disregarded without penalty. "If the needle be inserted too high and near the ring," he instructs, "we run the risk of not entirely separating all the veins of the cord, and of allowing some of those behind to escape; if too low and near the testicle, we hazard giving rise to purulent inflammation or an abscess in the small sac."

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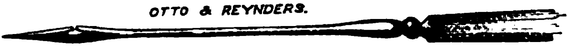
[1] *Lancet*, February 28, 1863, p. 233.

The usual preliminary steps of other approved methods of operating for radical cure of varicocele having been now observed, the surgeon carefully separates, from the plexus of veins within the scrotum, the vas deferens with its associate artery—the former forward and toward the anterior wall of the sac, the latter back and toward the septum scroti. Guarding these well apart by means of his thumb and forefinger, he plunges the point of the needle figured below, previously armed with a strong silver-wire ligature, in its cleft eye, directly through the two walls of scrotum thus held together, so as to deliver a loop upon the opposite side. This loop is then detached and left free. A fresh wire is speedily adjusted into the same eye, when, by simply drawing back the needle, a corresponding loop is made to appear at the starting-point made in the sac. Suffering these to rest *in situ*, the surgeon next proceeds to pass with deliberation a firm, straight, nickel-plated knitting-needle, or a silver probe, in front of the mass of veins, and grazing the scrotal integuments, entering by and making exit at the punctures already made.

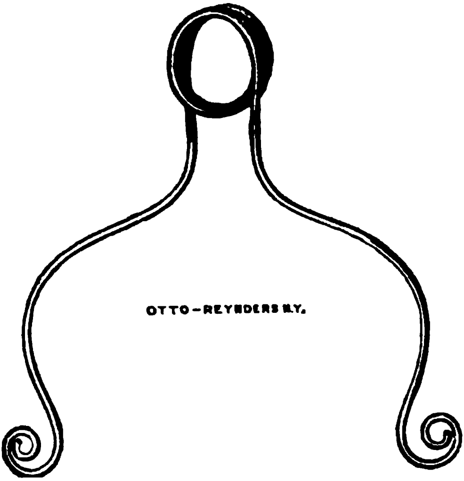


At this juncture of the operation, we have the morbid mass completely circumvented, and all that now remains to effect strangulation of the veins is to engage each loop over its proximate and projecting probe point and make traction.

This being the only part of the operation which is at all painful, a little chloroform should be used. Appropriate pressure is now made upon the two opposing ligatures, which causes them to slide along the probe, through the orifices on each side, until they finally straddle, and so occlude the veins.

In order to insure the obliteration of these veins, continued and uniform traction is necessary to be kept up for some days. This constant antagonism of the probe on one side of the veins, and the wires upon the other, we are in the habit of maintaining by means of the simple and light contrivance here figured.

The only objection we have to M. Ricord's "horseshoe" for the same purpose is, that it is unnecessarily cumbersome and heavy. Patients have often complained of its weight, besides which it has occasioned even pain and ulceration from pressure.



Since regularly inaugurating our own peculiar plan of operating for radical cure of varicocele, Mr. Wood, of King's Hospital, London, a name familiar to every advanced surgeon, has announced his own exceedingly neat and original mode of treatment. This plan consists in casting a wire-loop around the plexus subcutaneously, and, in imitation of the *écraseur*, adjusting their two free ends without to an ingeniously-contrived spring, which insures absolute division of the veins in fault.

Most excellent and unfailing results can be, without doubt, secured from this method in the hands of its expert inventor. But we would apprehend, from its employment generally, ulceration, and possibly sloughing at the point of resistance of the spring against the scrotal integuments.

The apparatus we desire to call particular attention to, however, will be found quite free from these evident objections, and, above all, comparatively inexpensive, since our own mode of maintaining the *serre nœud* is but an ordinary nickel-plated piece of wire, rendered more elastic and strong by simply recoiling it upon itself twice in the middle. Owing to its mechanism, when properly applied, no point of it need touch the surface of the skin.

After a lapse of the usual time when it becomes advisable to remove the ligatures with their complementary adjustments, the surgeon slackens the tension, and with a gentle rotary manœuvre withdraws the probe. The combination-knot being thus broken up, the two ligatures naturally and easily follow the slightest force.

By performing the operation in this manner, the wires which had been so safely, neatly, and readily occluded within the sac and around the veins, can be most easily withdrawn.

Too much prejudice, we have reason to believe, has lately arisen against operative procedures for the radical cure of varicocele. Without pausing to consider whether this may not have resulted from the many discouraging failures which have attended most of the methods detailed, or from the many terrors and dangers with which attempts at cure have been encompassed, we desire to record our opinion that indiscriminate resort to operation should by no means be entertained.

Mr. Hunter long ago computed the frequency of varicocele among male adults as one in every ten. Prof. Humphrey, of Cambridge, the monographist upon this subject in Holmes's great work on surgery, who rather discountenances active interference for its relief, admits the same ratio.

From that ample field of observation, the conscript service in the South during our late civil war, together with experience derived from private practice for over a quarter of a century, we have deduced a rate of one in eighteen.

Out of this large proportion of cases, however, the proportion of those whose condition may demand surgical interference will be found comparatively small. Operative procedures in this, as in every other disease, should be instituted with due caution, and I might add, only as a *dernier ressort.*

Mr. Erichsen has noted that varicocele seldom begins later than the thirtieth year. Neither this high authority nor any other has yet declared the earliest age at which it may become urgent and demand the surgeon's attention.

Most of the cases operated upon by us, we find, were between the ages of eighteen and twenty-eight.

Observation convinces us that ordinarily varicocele begins to develop at or about puberty, when natural afflux is directed to the spermatic vessels, and unnatural practices, if indulged in, irritate and congest these organs.

As a general rule, we deprecate operating for radical cure of varicocele before the age of fifteen, and advise against positive interference until physical development may be considered complete.

In this connection we desire to record our experience in two remarkable cases, undertaken, contrary to our established views above expressed, before the age specified. In one the operation resulted successfully, though I have no confidence in the permanence of the cure. This case was complicated with epileptiform seizures, which have since undergone marked mitigation both in frequency and severity. The other was unsuccessful, on account of immature age, and persistent indulgence, during treatment, of the very vice which had precipitated the malady.

In our own experience, so far from operation upon these veins ever entailing atrophy or other detriment to the testicle, as has been vaguely alleged, the organ has, in due course of time, not only recovered itself, but even resumed its normal size and function.

ART. III.—*General Conclusions as to the Nature of Yellow Fever; drawn from Original Investigations.* By JOSEPH JONES, M. D., Professor of Chemistry and Clinical Medicine in the Medical Department of the University of Louisiana; Visiting-Physician of Charity Hospital, New Orleans, Louisiana.

I. YELLOW FEVER is a continued pestilential fever, presenting two well-defined stages: the first characterized by active chemical change in the blood and organs, attended with elevation of temperature and aberration of nervous action, which may constitute the entire malady, and prove fatal in a manner similar to the infectious form of small-pox; and the other, a stage of depression, induced both by the sedative action of the febrile poison, and by profound changes excited in the blood, and in certain organs, viz., the heart, liver, and kidneys, and by the direct sedative and poisonous action of the excrementitious matter retained in the blood, in consequence of the failure, arrest, or perversion of the functions of the liver and kidneys, and by the arrest or perversion of the digestive function, in consequence of the action of the yellow-fever poison, in causing perverted nervous action, capillary congestion, and active desquamation of the secretory cells of the stomach, and in consequence of the elimination by the gastric mucous membrane of certain constituents of the blood, viz., urea and carbonate of ammonia.

The various manifestations—as the intense capillary congestion, depression of the action of the heart, delirium, coma, convulsions, vomiting, headache, urinary suppression, uræmic poisoning, jaundice, and biliary poisoning—may all be referred to the action of the poison producing the disease, and should not form the basis for the erection of distinct types of the disease.

The action of the yellow-fever poison is the same in all cases, whether mild or severe; the progress and termination of the case, as well as the manifestation of the various symptoms, depending upon the extent of the action of the poison, the condition of the system at the time of its introduction, the peculiarities of the constitution, and the supervention of other diseased states.

The action of the yellow-fever poison is definite, and the disease is characterized by definite manifestations. Yellow fever is a self-limited disease.

II. The changes of the blood appear to be continuous from the time of the introduction of the poison to the fatal termination; the intensity of the changes being increased, and their character being modified, as the disease advances, not only by the direct action, upon the constituents of the blood, of the poison, but also by the addition of certain noxious substances, as bile, urea, carbonate of ammonia, sulphates, phosphates, and extractive matters, in consequence of the profound lesions induced in the liver and kidneys.

Certain constituents of the blood, as the albumen and fibrine, are not only altered physically and chemically in the early stages of yellow fever, but, as the disease advances, from the causes just specified, certain excrementitious matters, which in a state of health are continuously eliminated, accumulate in the circulating fluid, and by their direct action upon the elements of the blood, and upon the nervous system, and by their disturbing actions upon the processes of nutrition and digestion, still further alter the physical, and chemical, and vital properties of this fluid.

III. The maximum elevation of temperature is rapidly attained upon the first and second days of the disease, varying, according to the severity of the attack, from 102° to 107° Fahr., in the axilla, and, as a general rule, from the third to the fifth day, steadily falling and sinking down to the normal standard, and even below; in some fatal cases it rises again toward the end, rarely, however, reaching or exceeding 104° Fahr., and never attaining the high degree of temperature characteristic of the stage of active febrile excitement; the supervention of an inflammatory disease, or the occurrence of an abscess, or the access of paroxysmal malarial fever, may in like manner cause a progressive elevation of temperature, with slight evening exacerbations. The pulse at the commencement of the attack is often rapid and full; the increase in the frequency of the pulse does not, however, as a general rule, continue to correspond with the elevations and oscillations of temperature, as in many other febrile diseases; and in many cases of yellow fever the remarkable phenomenon is witnessed of the pulse progressively decreasing in frequency, and even descending below the normal standard, while the temperature is maintained at an elevated degree; and, on the other hand, the pulse often increases in frequency, but diminishes in force near the fatal issue; the occurrence of copious hemorrhage from the stomach and bowels may be attended with sudden depression of temperature, and increase in frequency, but diminution in the force and fullness of the pulse.

The cause of the rapid rise and declension of the temperature in yellow fever must be sought chiefly in the changes induced in the blood and in the organs upon which the circulation and integrity of the blood depend; neither the rapid rise nor the sudden declension of the temperature can be referred wholly to the effects of the yellow-fever poison upon the nervous system.

IV. The fever of the *first stage* of yellow fever, like *fever in general*, however caused, consists essentially in elevation of temperature, arising from increased chemical change in the blood and tissues, and is attended with changes in the physical and chemical constituents of the blood, and aberrated nervous action.

As long as the skin, kidneys, lungs, and gastro-intestinal canal, perform their functions, this stage is characterized, as in other fevers, by an increase in the amount of solids excreted. But this increased elimination of the products of chemical change is not, in yellow fever, a constant concomitant of the increased temperature.

Not only are large quantities of the products of oxidation formed during the hot stages of yellow fever, but, as we have shown, by numerous analyses of the blood, black-vomit, urine, brain, heart, liver, spleen, and kidneys, in this disease, they are altered to a certain extent from their characteristic state of health; the albumen of the blood, under the action of the poison, being transformed into nitrogenous and non-nitrogenous compounds, a portion of which, as the fatty matter, and altered fibrine, being arrested or accumulated in certain organs, as the heart, liver, and kidneys.

The peculiar phenomena of yellow fever, like those of acute phosphorus-poisoning, are due to the nature of the specific poison, and the character of these changes, which it is capable of exciting *primarily in the blood*, and secondarily in the nervous and vascular systems, and in the nutrition of the various organs.

Neither the rapid rise nor the sudden declension of the temperature in yellow fever is necessarily referable solely to the effects of the poison upon the nervous system; because, in the first place, the changes of the blood are among the first manifestations of diseased action, and the progress and termination of each case are largely dependent upon the extent and character of the changes of the blood, and the degree of the elevation of the temperature; and, in the second place, the sudden fall of the temperature during the succeeding stage of calm may be referred to the peculiarity of the self-limited chemical changes excited by the poison, and to the structural alterations induced in the muscular tissue of the heart, and in the liver and kidneys, and the sedative action of the bile, urea, and other excrementitious products retained in the blood, upon the nervous system; and finally, in the third place, the changes of the blood and of the heart, liver, and kidneys, are of a definite physical and chemical nature, and could never be induced by a mere exaltation or depression of nervous action, and must be referred to the introduction and action of some agent or material related in a definite manner, in its constitutional and physical properties, to the fluids and solids in which it induces these profound physical and chemical changes.

Without doubt, the action of the yellow-fever poison upon the nervous system may be of the most direct and important character; but well-established facts do not justify us in locating the origin of the disease wholly in the action of the poison upon the nervous system; and, in fact, the earliest sensible manifestation of disordered nervous action, as evidenced by uneasiness, loss of appetite, and chilly sensations, may be entirely secondary to the changes in the blood, by which all parts of the nervous system are surrounded and supplied.

V. While many of the most striking phenomena of yellow fever, as chills and fever, and collapse, must necessarily be attended with disordered vascular innervation, at the same time we must look to the *blood* as the *seat* of the operations of the fever-poison; and, as the nutrition of every organ and tissue depends upon the proper constitution of this fluid, its alterations must affect the entire organism, and the true commencement of yellow fever is in the alterations of the relations between the blood and tissues.

The nervous system, both cerebro-spinal and sympathetic, suffers at first in common with the entire system; but, as the most important offices are performed by the nervous system which relates the mind to the various parts of the body, and to the exterior world, and also regulates the actions of the circulatory and respiratory systems, and coördinates the actions of the component members of the system in all the phenomena which succeed the *invasion of fever*, the *blood and nervous system* become *joint factors*.

VI. During the active stages of yellow fever, profound changes take place in the organs and tissues, especially in the kidneys, heart, and liver; oil and granular albuminoid or fibroid matter transude through the capillaries and fill up the cells and excretory ducts, and arrest the function of certain organs. The liver of yellow fever does not present the soft, friable condition characteristic of true fatty degeneration. The jaundice resulting from the suppression or alteration of the excretory function of the liver would appear to be due to the same causes which induce the suppression of the urine, viz., to the deposits of oil and fibrinous or albuminous matter in the excretory structures of the kidney and liver.

We do not mean to say that, in the case of the liver, its secretion ceases, or is even in many cases diminished; on the contrary, it may even be increased, especially in the stage of active febrile excitement; but, from the cause indicated, obstruction takes place in the biliary tubes, and there is a rapid absorption of the bile directly into the blood-vessel system, and in this manner the delivery of the bile into the intestinal canal is impaired and sometimes arrested.

The heart in yellow fever appears to be as fully permeated with oil as the liver; in the latter organ, however, a large amount of the oil is inclosed within the cells; in the former, in addition to the deposits of oil, there is also granular degeneration of the muscular structures.

VII. While yellow fever is characterized in common with several other diseased states by an irritation of the gastric mucous membrane, the peculiar nature of the vomited matters does not rest entirely upon the congestion and irritation of the mucous membrane of the stomach, but is influenced to a greater or less extent by the changes of the blood, liver, kidneys, and nervous system.

The vomiting in yellow fever may, to a certain extent, be regarded as salutary, and as an effort for the elimination of certain excrementitious materials from the blood. In some cases, the first effect of the black-vomit may seem to be salutary; the tongue improves in appearance, the febrile heat abates, and, if it were not for other profound changes in the blood, liver, and kidneys, lying back, as it were, of this almost universally fatal symptom, beneficial results of the most important character might flow from the relief afforded by the removal of a certain amount of excrementitous matter, as urea, and ammonia, and bile, from the blood.

Black-vomit is to a certain extent an *excrementitious* product, containing *urea and carbonate of ammonia*, in addition to altered blood-corpuscles, epithelial cells, broken capillaries, mucus, various matters received into the stomach, as food and medicine, serous exudations, and acetates, lactates, phosphates, and chlorides.

Black-vomit in yellow fever is due to several causes, as—

1. To the direct irritation and structural alteration of the gastric mucous membrane by the poison—the active agent which probably is first received into the blood, and acts in this manner or through this medium upon the gastric mucous membrane, for we find contemporaneous changes taking place in the heart, liver, and kidneys; and these changes would most probably *succeed* the gastric irritation, if the poison was received in food or drink primarily by the stomach.

2. To the structural alterations of the blood, and especially to the marked diminution of the fibrinous element which appears to sink to a lower figure than in any other known disease.

3. To suppression of the action of the kidneys, and the retention in the blood of urea and other excrementitious products, and the elimination of urea as carbonate of ammonia by the gastro-intestinal mucous membrane.

4. To the direct irritant action of the ammonia and excrementitious materials, eliminated vicariously, upon the mucous membrane of the stomach and intestines.

5. To the irritant and nauseating effects of the bile in the blood. The bile retained in the blood, without doubt, produces its characteristic effects upon the nerves supplying the stomach, inducing nausea and vomiting.

6. To the degeneration of the cells of the gastric mucous membrane, attended with or characterized by the deposit of granular fibroid or albuminoid matter and oil-globules in the

secretory cells, and in the walls of the smaller blood-vessels and capillaries.

7. To the capillary congestion of the gastro-intestinal mucous membrane, similar in all respects to the intense capillary congestion which characterizes all the tissues in this disease, in consequence of the physical and chemical alterations of the blood, and of the morbific action of the poison and its products upon the vaso-motor system of nerves.

Black-vomit, therefore, is an *effect* or result of *preceding* changes or actions, and is not a cause; it is an error, therefore, to search, either by chemical reagents or by the microscope, for the *cause* of the disease in one of its *products*.

VIII. The chief *causes of death* in yellow fever appear to be:

1. The direct action of the febrile poison upon the blood and nervous system, depressing and deranging the actions of the one, and rendering the other unfit for the proper nutrition of the tissues.

2. The suppression or alteration of the functions of certain organs, as the kidneys and liver, and the retention in the blood of the excrementitious matters normally eliminated by these organs.

3. The structural alterations of the heart, and consequent loss of power in this organ.

4. Profuse hemorrhages from the stomach and bowels.

IX. Yellow fever differs essentially in its symptoms and pathology from malarial fever.

In the latter, the constituent of the blood, which appears to suffer to the greatest and most essential degree, is the colored blood-corpuscle; in the former, the constituent of the blood which suffers to the greatest extent is the albumen.

The changes of temperature in yellow fever follow a definite course, and are never repeated in uncomplicated cases; in malarial fever, on the other hand, they recur at regular intervals, and may be indefinitely reproduced.

As a general rule, yellow fever attacks but once; malarial fever produces no exemption, but, on the contrary, establishes a disposition to frequent recurrence.

Convalescence from yellow fever is comparatively rapid, and the constitution of the blood is rapidly restored; in malarial fever, the changes of the blood and organs, and especially of the liver and spleen, may be profound and long continued.

The liver in yellow fever presents various shades of yellow, and contains numerous oil-globules; the liver of malarial fever is of a dark color, most generally slate upon the exterior and bronze within, and is loaded with dark pigment-granules; the spleen is comparatively unaffected in yellow fever, while it is enlarged and softened in malarial fever; the heart and kidneys are softened and infiltrated with oil and granular albuminoid matter in yellow fever, while they are comparatively unaffected in malarial fever; the urine is almost always albuminous, and contains casts and bile in yellow fever, while in malarial fever albumen and casts are almost always absent, and the urine presents morbid periodic changes, corresponding with those of the paroxysm.

X. Yellow fever is a self-limited disease, occurring, as a general rule, but once in a lifetime. The constitution of the blood, and even of the textures of the body, is altered; the most important organs, as the heart, kidneys, and liver, as well as the most important nutritive fluids, are profoundly impressed. These changes of the blood, heart, kidneys, and liver, as well as of the nervous system, may be compared to the profound changes induced in the blood and organs, and especially in the integument, by small-pox. If this view be correct, we cannot by drugs arrest or cure yellow fever any more than we can arrest or cure small-pox, measles, or scarlet fever. If drugs accomplish the effect of promoting the free and regular action of these emunctories through which the poison and the product of its action are eliminated, and if, further, they tend to preserve the integrity of the blood, and to sustain the actions of the circulatory and nervous system, they will, without doubt, achieve much good, and perhaps all that we are justified in looking for, in the present state of our knowledge. By judicious treatment, by proper ventilation, diet, and rest, we place the patient in that condition which is best adapted to the successful elimination of the poison and its products; but we do not arrest or cure the disease, as we certainly may do in paroxysmal malarial fever, by the proper administration of quinine.

Art. IV.—*On the Mechanical Treatment of Synovitis of the Knee-Joint.* By C. Fayette Taylor, M. D., Surgeon to the New York Orthopedic Dispensary and Hospital, etc., etc.

If the mechanical treatment of all diseases of the joints has its conception in a conservative idea, this is especially true in regard to synovitis of the knee-joint. Here, if anywhere, our first and last idea must be protection. Neither careful nor vigorous management, under a single idea in the treatment of this disease, can compensate for the omission of other ideas which go to make up the conservative whole involved in the term *protection of the joint.* A correct comprehension of the mechanical requirements involved, appropriate mechanical means for realizing our conception, and a patient persistence which does not tire nor attempt short passages to the end, till it is fairly reached, are the requirements needed in the successful treatment of this disease. I use the word *protection* with a purpose. Synovitis of the knee-joint, like inflammations everywhere, requires rest. But the idea of rest alone is but a feeble conception of the requirements necessary to meet all the indications which this disease presents.

The gypsum bandage gives rest from motion and partially from pressure also; so that, for a time, and to a certain extent, there follows a subsidence of the inflammatory process. But there comes a time when, after a certain degree of subsidence of the inflammation has taken place, the want of motion in the joint is injurious, because it is the withholding of the natural stimulus to the healthy nutrition of the synovial membrane, and is a direct cause of irritation; and, after that point is reached, rest from motion is no longer protection, but the reverse. All, who have had any experience in the treatment of this disease, must have observed a persistent irritability and long-continued sub-inflammation in the later stage of treatment by rest alone, precisely similar to what we find in a healthy joint which has been, from any cause, for a long time deprived of its power of motion. Motion, then, under certain circumstances, as well as rest under other circumstances, is protective. But there may be an indication for motion, so far as the synovial membrane and the ligaments of the joint are concerned, and such motion at a certain period may be the best and only healthy stimulus to the normal secretion of the synovial fluid; while neither the synovial membrane, the cartilage of the joint and, perhaps, the epiphyses of the bones, may yet be in a condition to bear pressure; not even the pressure caused by the tonic contraction of the muscles, and still less can they bear pressure accompanied with weight and motion. It becomes, then, the surgical-mechanical problem to make these two otherwise antagonistic conditions harmonize.

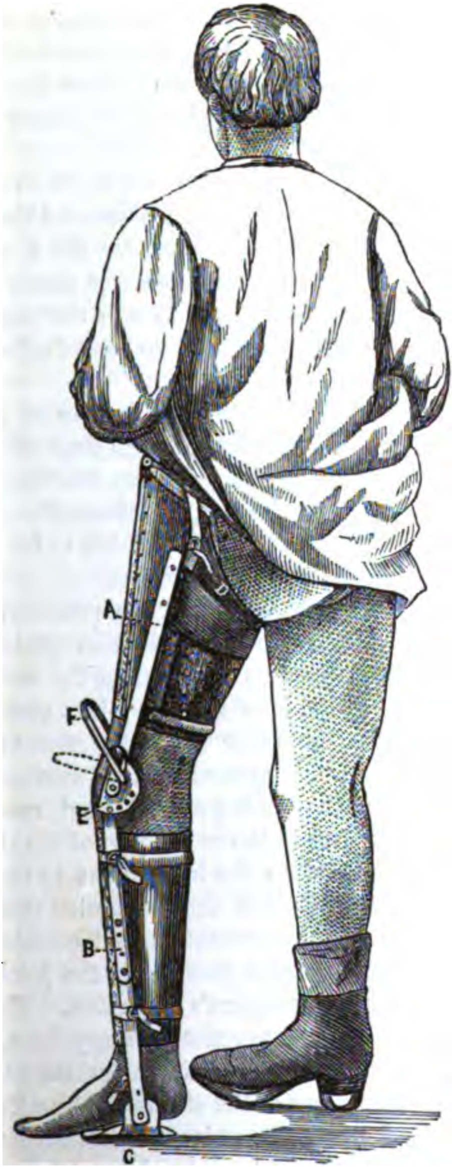
There are other problems equally important to those just mentioned, and equally antagonistic without mechanical interference, which require solution; such as confinement of the leg without confinement of the whole body, involving protection with locomotion as against total confinement of the person; progressive changing of the angle at the knee, at the surgeon's option, with a view of preventing or removing distortion; motion or rest, or both alternately, under the same control; complete relief from pressure in the joint or partial pressure, according to the degree of recovery and consequent increased ability to bear it, at different stages of the process of resolution; in a word, to be master of the situation, and to be ready and able to respond to any and all indications, separately or at the same time, constitute the problem of the mechanical treatment of synovitis of the knee-joint.

The following is a description of the construction and use of an apparatus which is designed to solve the mechanical problem above mentioned, and, through this means, to place all the indications presented by the inflammations of the synovial membrane of the knee-joint directly under the surgeon's control. In the first place, it is necessary to grasp the limb easily but firmly, so that it may be held without motion or jar.

The apparatus consists of a steel bar, A (Fig. 1), above, and another, B, below the knee on the outside, and other similar bars on the inside, which are united by several bands which pass under the leg.

These bands which unite the inner and outer bars are im-

FIG. 1.



portant. They should be entirely unyielding, so that the inner and outer parts of the instrument cannot spring apart in the least; and, that they may not be too heavy, a vertical section ought to be concave. Inside the upper and lower portions of the frame are placed strong leather linings securely riveted. They exactly fit the thigh and leg, and are laced in front.

This arrangement grasps the leg and thigh as securely and with as much ease to the patient as a plaster-of-Paris bandage. Hence the first indication is answered. By a peculiar construction of the joint at E—to be hereafter more particularly described—the instrument is made to take the angle assumed by the leg, or whatever angle the surgeon desires, with minutest adjustability.

The knee is left free for the application of an elastic or roller bandage with opportunity for changing, with increased or diminished pressure, or with local applications, as may be desired. Thus motion in the joint is effectually stopped, and with a material which is not frail and liable to be broken, but entirely uninjurable in bodily movements.

But it is desirable to remove also the pressure within the joint. To that end four pieces of adhesive plaster are prepared in the same manner as for dressing for extension and counter-extension in disease of the hip-joint, and applied in a similar manner on the inner and outer aspects of the leg and thigh, from the knee upward and downward, with the ends, to which pieces of webbing are attached, reaching nearly to the ankle below and to the upper part of the thigh above, where buckles are placed on the instrument to receive them. By drawing the several ends of these adhesive straps applied as above described, effectual extension and counter-extension are made at the knee and the pressure in the joint wholly or partially removed, at the surgeon's discretion. The knee is a true hinge-joint, very strong to resist ordinary force, but whose ligaments are easily overcome in relieving pressure in this manner. The forcible drawing of the straps and buckling the ends at the upper and lower extremities of the instrument afford sufficient extension and counter-extension without the intervention of screws or means of elongating the instrument.

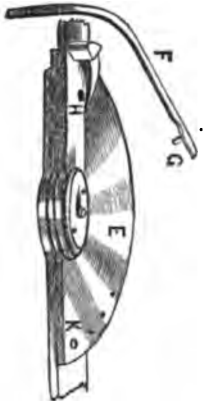
But, another important indication is, to make available the hygienic influences of fresh air and exercise. Many cases of synovitis in the knee-joint, which are simple and incipient, improve for a time under total confinement, but, after a while, become worse as the patient sinks for want of fresh air and exercise. Hence the tendency with every partial subsidence of the inflammation to get the patient off from his bed and out into the air, at the risk of redeveloping the disease by premature use of the only partially-restored joint. It is a constantly-recurring question in cases treated by total confinement, which is the greater risk : to keep the patient longer confined, to the certain deterioration of his general health, with its deleterious effect on the disease; or to take the chance of too early use of the knee.

This difficult dilemma is avoided in the following manner: The lower portion of the instrument—which may be lengthened or shortened at B, to get exactly the proper length—extends to near the sole of the foot, where it is jointed on both sides to a foot-piece of steel, C, which rests beneath the foot and about half an inch below it; or, so far that the sole of the foot cannot reach it to rest upon it when the patient steps in walking. No part of the weight of the body rests on the adhesive straps, they being used solely for the purpose of obtaining extension and counter-extension, as previously described. But, for the purpose of supporting the weight of the body on the instrument alone, a thin plate of steel is fastened to the outer portion of the frame of the instrument, extending to above the trochanter major, curved to fit the thigh, and of a width equal to about one-fourth of its circumference. To this the leather lining, which laces around and firmly holds the leg, is attached. A piece of thick steel is riveted across the top, to add strength, and from the posterior upper corner the strong webbing band D is fastened, which, after being incorporated with the upper edge of the lining, cut to fit the part, passes under the ischium and around the thigh, and is fastened to a buckle on the upper anterior corner of the plate.

The arrangement is in such a manner as to receive the whole weight of the body without yielding. The instrument thus becomes itself an ever-present crutch for the purpose of supporting the weight of the body during locomotion. The foot-piece, C, occupies so little space that the shoe is put on as usual, and the fact that the foot does not rest on the sole of the shoe is not observable. In very sensitive cases, arm-crutches are first given to the patient. But after a while in all cases, and from the first in most cases, the patient can walk with ease and impunity on the instrument alone. The extension of the instrument far enough beneath the foot to prevent contact adds about half an inch to the length of the leg. To compensate for this difference, the sole of the shoe on the other foot is made thicker, and, to still further save the diseased leg from accidental jars, this sole is usually made about one inch thick, so that the well leg is rather longer than the affected one. The patient can then walk with perfect ease and comfort, and the surgeon has the immense practical advantage, in employing this conservative treatment, of not being restricted as to time. In ordinary cases, during the later period, the patient can often pursue his business with impunity from injury and independence in regard to the time necessary for complete subsidence of the inflammation. Besides, he can graduate the use of the joint, either in regard to its motion or the weight it may bear, from time to time, as the case proceeds toward recovery. As a rule, motion is indicated before pressure can be tolerated; that is, motion with no pressure in the joint is found to be beneficial long before either motion with pressure or pressure alone would be borne. To meet the requirements indicated above, the joint (E, Fig. 1), has now to be described. In the description heretofore given, this joint has been supposed to be locked at an angle to accommodate the degree of flexion of the leg. But this peculiar joint has other uses. It is constructed (Fig. 2) with a semicircular plate, E, resting between the ends of the upper and lower portions of the instrument, where they are united by a rivet at the knee. The lower edge of this disk is firmly fastened to the lower bar by a screw, K, which can be moved to any of the numerous holes prepared for it in the lower edge of the disk, and with a corresponding alteration of the angle at the joint. The upper part of the instrument is held in

place by means of a strong pin, G, in the end of the spring F, which the latter forces through corresponding holes in the steel bar and disk whenever they are opposite each other. By depressing the spring F, the extremities are made to rise on the inclined planes on either side, and thus the pins are withdrawn from the holes in the disk, leaving complete freedom of motion in the joint. These pins are still retained in the holes in the steel bars, and are pressed against the face of the disk by the spring F, till they are carried opposite the holes from which the act of depressing the spring withdrew them, when the latter forces them in and the apparatus is fixed again. The usual method is to unlock the joint while in the act of sitting down. This is accomplished with a slight and generally unnoticeable movement of the hand.

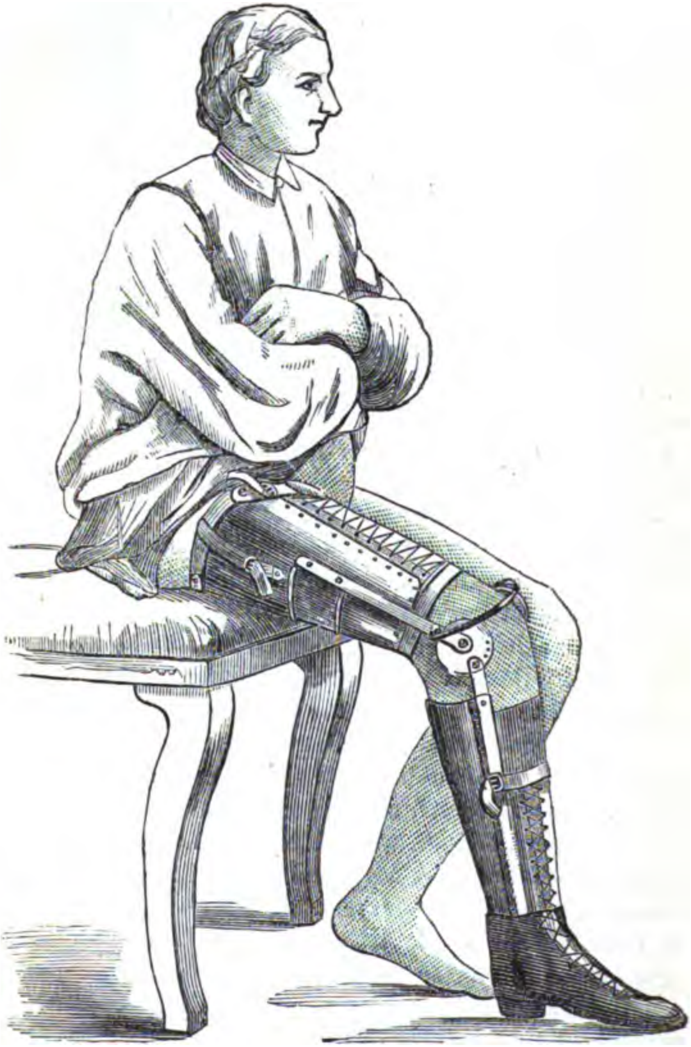
Fig. 2.



This occasional bending of the knee, more or less—always without pressure—after the inflammation has subsided to a certain degree, is often quite sufficient to entirely change the character of the secretions in the joint. At a much later stage free motion at the knee during locomotion may be admissible, but not while there is much flexion remaining.

In regard to the flexion at the knee, which usually accompanies inflammation of the lining membrane of the joint, no forcible extension of the leg upon the thigh is necessary or admissible. Forcible straightening or any thing approaching it is not necessary, because we find that, during the conservative treatment here described, a gradual relaxation of the muscular contraction takes place with the subsidence of the inflammation. But there should be no haste to realize the straightening of the leg. It is sure to take place voluntarily, after a while, when the treatment is carefully and steadily pursued without regard to the time it takes to arrive at the point of relaxation. As we find a gradual increase of motion in the joint, with increased ability to straighten, we have only to adjust the instrument to a different angle corresponding to the improved condition of the leg, by changing the position of the screw K, as previously described. If by accident the instrument is made too straight for the comfort of the patient, it should be at once changed to a position perfectly easy to bear.

FIG. 3.



But, after the inflammation has subsided, and the muscles have relaxed till there is little or no flexion at the joint, and motion is tolerably free and without pain, we are not yet ready to allow the patient free locomotion with the whole weight of the body on the joint. We find, in synovitis of the knee-joint, that it is generally a long time after all active inflammation has subsided, before there is the same ability to bear the pressure in the joint, which free locomotion would inflict, that there was before the inflammatory process was set up. So that, if we would carry out our conservative idea to the end, we must still seek to protect the joint from the deleterious influence of pressure till it is fully able to bear it without injury. But perfect freedom of motion is safe long before the joint is capable of sustaining weight. In still further adhering to the conservative, protective idea with which we began, we at this point adopt the plan designed for relieving the whole leg—including, of course, the hip- and knee-joints—from weight in locomotion, while at the same time allowing perfect freedom of motion in every joint. With this apparatus the patient may walk about without the least restriction on his movements in every joint, while the whole or any portion of the weight of the body may be sustained by the instrument.

"This apparatus,[1] intended to sustain the weight of the body from resting upon the hip-joint—it answers equally well for the knee—without restricting in any manner the movements of the limb in locomotion, is shown in Figs. 4 and 5, and is constructed and used in the following manner:

"A strong upright bar of steel (Fig. 4) is jointed at A in such a manner that, when vertical, the rivet of the joint is behind the vertical line. It is evident that, with such a joint, vertical weight would not only be sustained, but would add firmness to the supporting power.

"D D are steel plates about one-fourth of the circumference of the leg, to which are attached the broad bands of leather which lace around the leg and thigh. The lower steel plate is riveted to the upright, but the upper one is fastened by three 'keepers,' which enable it to be raised or lowered, in adapting the instrument to the length of the leg.

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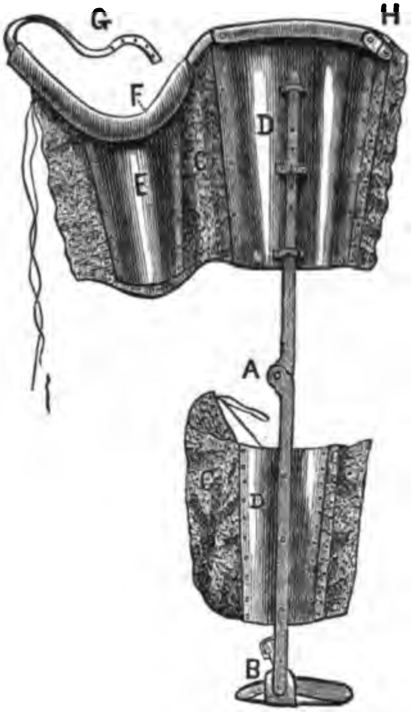
[1] From a work in preparation on "The Mechanical Treatment of Disease of the Hip-Joint."

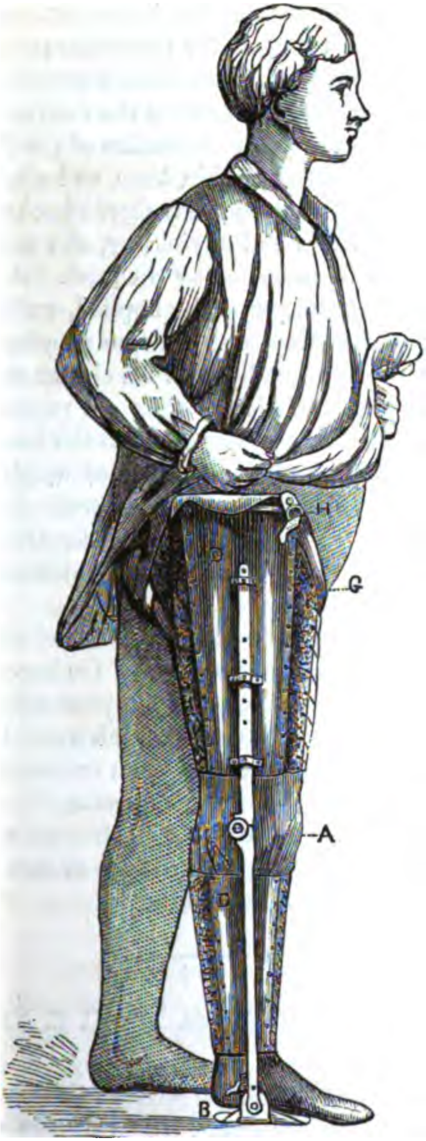
"B is a foot-piece intended to rest under the foot inside the shoe. The broad band of leather, C, is cut down at the top, where there is a firm pad, F, terminating in the strap, G, which, when the instrument is applied, fastens in the buckle H. The leather, C, has the thin metal plate, E, riveted to it to give it more firmness.

FIG. 4.



"The instrument is seen applied in Fig. 5. It is adjusted at such a length that the heel does not reach to the foot-piece, but there is a little space beneath the foot. So that the padded strap, G F, as will be seen, passing under the ischium and resting close against the perineum, is arranged in such a manner as to sustain the entire weight of the body while the patient is standing or walking. But care should be used, in applying the instrument, that it is not laced too close. The leg ought to move freeely in it, so that the whole weight will rest on

FIG. 5.



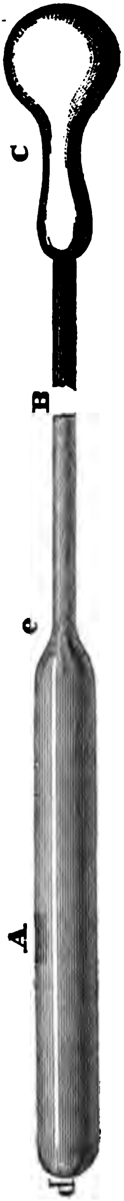
the padded portion at F, and not any on the leg and joint. The foot is dressed in the ordinary manner, the space between the bottom of the foot and the foot-piece being too little to interfere with applying a shoe in the ordinary manner, and the shoe itself is sufficient to keep the instrument in place. But a small piece of adhesive plaster properly applied to the leg, and the lower end fastened to the buckle near the bottom (B), is generally preferred for sustaining the instrument. It will be seen that, by the peculiar construction of the joint at A, the leg, when lifted, bends freely at hip, knee, and ankle; but when straight, as in standing, the joint is forced backward, and the instrument becomes firm and unyielding, and neither pressure nor concussion can be sustained by the joint. A person wearing such an instrument, properly applied, walks about with perfect freedom of motion, and with no appearance to others that he has a contrivance beneath his clothes which protects the hip-, knee-, and ankle-joints from all pressure or concussion. And while no injury can come to the healthy articulations from the absence of the accustomed weight upon them, so long as their motions are not interfered with, the importance of affording protection to a joint, susceptible from previous disease or in the incipient stages of an inflammation, cannot be over-estimated."

This instrument is generally made use of during the last months of the treatment of synovitis of the knee-joint, and, if its use is prolonged to several years as a precaution against possible injury, no harm can come from such use. It is far better to carry out the conservative idea to an unnecessary extreme, than by too great haste to jeopardize a cure.

Mild and incipient cases are often treated with complete success by the careful and persistent use of this latter instrument alone from beginning to end.

ART. V.—*A New Rectal Bougie.* By C. E. NELSON, M. D., New York.

IN the recent treatment of a case of stricture of the rectum, I was desirous of sparing the patient the discomfort of having the anus kept on the stretch for twenty minutes during the gradual dilatation by means of the ordinary rectal bougies; I therefore devised an instrument (which may be called a bougie, for the sake of simplicity) fashioned as is represented in the woodcut: *A* is a solid or hollow cylindrical piece, made of steel, polished; the distal end (*d*) being moderately truncated and rounded, as in an ordinary bougie; the proximal end (*e*) being more conical in its curve, as with the end of a French bougie; *B* is the shaft to introduce it with, this latter being fitted with a handle (*c*); the shaft *B* being cylindrical, of steel, polished; the handle (*c*) may be flat, with its surfaces smooth or marked with raised lines, or rounded; and may be made of steel, ivory, wood, or any material adapted to the purpose; the shaft to be of proportionate diameter to the portion *A*, to insure strength.



The portion *A* is the part inserted in the stricture; the shaft (*B*) lies in the rectum, protrudes from the anus, the handle (*c*) being between the patient's legs; in this way, by having the portion *A* made in diameters equal in size to the different graduated sizes of bougies, with corresponding thickness of the shaft *B*, a stricture of the rectum can be treated, by gradual dilatation, without at the same time inconveniencing the patient by having the anus kept long and frequently on the stretch.

As to minor details, the piece *A* is to be of a proper proportionate length to the shaft, say three and a half to four inches in length, the whole instrument, including the handle, being twelve inches long.

Objections.—The objection might be made that in case the piece (*A*) was tightly grasped by, or had slipped beyond the stricture, and had become detached from the shaft, it would cause an awkward delay, obliging considerable dilatation by the speculum and subsequent seizure of the piece by forceps. This could not happen if the shaft were securely welded or soldered into the piece *A*.

Mode of Using.—The instrument can be most easily introduced if held lightly at the middle of the shaft (*B*), with the thumb and two fingers of the right hand; the left hand holding up the near buttock, the middle finger stretching up the anus.

In case of the stricture being situated near the anus, and the piece *A* slipping beyond the stricture, the end (*e*) of the piece *A* is made slightly conical, so that it can the more easily be brought back into the strictured portion.

Clinical Records from Private and Hospital Practice.

I.—*Case of Facial Paralysis.*[1]. By Gouverneur M. Smith, M. D.

The brief recital of a case of Bell's paralysis, which has recently come under my care, may prove of interest, as the method of treatment adopted tends to show the correctness of views originally presented to this Academy a short time since by one its of distinguished fellows.

On the 5th of April last, a patient came under my care, suffering with paralysis of the left side of the face. The patient was a gentleman of culture and means, about sixty years of age. Residing for a large part of the year at his country-seat, on the Hudson, and spending much of the time in the open air, he was ordinarily in the enjoyment of excellent health, and manifested his robust condition by a commanding appearance. The occurrence of such local palsy was the occasion of no little solicitude in the mind of the patient, lest it be precursory of a hemiplegic seizure.

In studying the etiology of the malady, it seemed probable that the disorder had been excited by cold, to which the patient had been exposed while riding in the Central Park on the day previous to the one upon which the paralysis was fairly developed. There was no evidence of centric disturbance; peripheral lesion was not marked by any decided local point of irritation.

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[1] Read before the New York Academy of Medicine, June 5, 1873.

In speaking of peripheral facial hemiplegia, Aitken remarks: "Although it is not a dangerous form of paralysis, it is one from which recovery is very slow, and in which prognosis, as to complete recovery of symmetry of the face, is uncertain;" and also says, "from four to ten months is the ordinary duration of the affection; but there are instances in which the paralysis yields in twenty-four, fifteen, or even twelve hours, but such cases are exceptional" (Trousseau).

After regulating the bowels of my patient, he was placed under the use of iodide of potassium, and on four occasions electrization by a specialist was applied to the affected side. No counter-irritation behind the ear was resorted to, owing to the absence of apparent local lesion. On the 21st of April the patient had shown little or no improvement. I remembered that Dr. William Detmold had read a paper before this Academy (March 20, 1873), entitled "Facial Paralysis treated by a New Method." Not having been present at the reading of the paper, I called upon Dr. Detmold, and he briefly gave me the views he had here expressed, and as since published in the NEW YORK MEDICAL JOURNAL, May, 1873.

In the case which he has reported he says: "I determined to try what mechanical means would do. I bent a wire into a hook, which I put into the drooping corner of the mouth, and, drawing it up, bent the wire over and behind the ear. I recommended the patient to keep it on overnight, trusting that, by entirely relaxing the paralyzed muscles, and supporting the dragging weight, I might somewhat relieve the defect." Prompt amelioration followed this method of treatment. Dr. Detmold further says: "It then occurred to me that I might make this instrument still more effective, if I could combine with it a permanent and continuous galvanic current through the paralyzed parts, by having it made of two different metals, thus forming as it were a single cell of a galvanic battery." An instrument fulfilling such purpose was made by Mr. Chester under Dr. Detmold's direction, and the patient at the time of the report was steadily improving. The case had been a chronic one, of sixteen years' duration, and had not before been relieved. In his conclusion Dr. Detmold remarks: "I am unable to say what share in the benefit, or whether any, is due to the galvanic current, to which, on the whole, I do not attach as much importance as to the mechanical support."

Resolving to test the applicability of this method of treatment to the acute case under my care, I procured from Mr. Stohmann's a German-silver wire mouth-piece, used by the dentists in holding the mouth open during dental operations. The dentists employ two, one on each side. One of these I bent in such a manner that it would not keep the mouth open, but simply act as a hook comfortably catching the corner of the mouth, and to the outer end fastened a piece of copper wire, which, passing across the cheek, was turned around the ear. The wire passing over the ear being covered with a soft material, was not a source of irritation. As the cheek was quite pendulous, I ordered a bandage to be passed around the head under the jaw, to give additional support.

The relief which followed was significant, for, after using this appliance for two nights, decided amelioration was manifest. Wishing the patient to avail himself of any advantage that might be derived from the galvanic current, I went with him to Mr. Charles T. Chester's, 104 Centre Street, and, giving a wire model as to size, Mr. Chester had prepared this neat instrument, which is a fac-simile in principle of the one made under Dr. Detmold's direction. The smooth and easily-fitting hook or mouth-piece is made of platinum, the wire running across the cheek and turning behind the ear is of silver, and to this is adapted a zinc plate, which is covered with velvet, with the view of readily retaining the moisture of either saline, acidulated, or pure water.

The patient on procuring this instrument substituted it for the one I had extemporized, using it at night; convalescence was rapid. Recovery from the facial paralysis was complete in about a month from the time of its incipiency. There has been no recurrence of the difficulty; the symmetry of the face is normal.

Several questions naturally arise in this connection. In the first place, was this case one of those occasionally met with, in which recovery takes place without material artificial assistance, and, in the second place, if recovery is due to treatment, how far was it attributable to the mechanical means, and how far to galvanism? In response I would say that, there was scarcely any perceptible improvement in the patient until the "mechanical means" were resorted to; convalescence seemed to date from the night they were employed.

Whether or not the second instrument was a more potent remedial factor, by its galvanic properties, it is difficult to say. The patient was not conscious of any galvanic influence, though there is no question of the passage of a current through the affected side, by means of this appliance, but, as stated in Dr. Detmold's paper, from the periphery to the centre. In regard to the action of this instrument, Mr. Chester has written to me as follows: "I have tested the little galvanic battery, made to apply to the face of Mr. ——, in a general way. The covering of the zinc plate, being moistened with water, made a good conductor by the addition of a slight trace of acid, and the plate then applied to (behind) the ear, while the platinum end was inserted in the mouth, I find that it generates a steady current capable of deflecting a galvanometer or sending a telegraph-message easily through seventy-five miles of the ordinary telegraph-wire."

This case, so far as I am aware, is the first acute one treated by the method suggested by the distinguished fellow to whom allusion has been made.

II.—*Case of Remittent Fever, complicated by Fungoid or Gelatinoid Tumors of the Intestines, and Fatal Hæmorrhage.* By Israel Betz, M. D., Oakville, Pa.

J. M. W., aged twenty-four years, born in Cumberland County, Pa., height five feet eleven inches, general weight one hundred and eighty pounds, of erect figure, descended from a long-lived ancestry, and free from hereditary disease. He had been free from sickness previous to 1871. In 1869 he went to Chattanooga, Tennessee, remaining until the summer of 1871. During this interval he enjoyed perfect health, remaining free from malarial disease. On his return in 1871 he took up his residence in Harrisburg, pursuing his avocation, that of machinist; remaining several months, he returned to Cumberland County, with an attack of remittent fever, accompanied by considerable gastric and biliary derangement, from which he convalesced slowly. Convalescence being nearly established at the end of the fifth week, he incautiously exposed himself to wet, in consequence of which a relapse ensued, again consuming a period of nearly four weeks before convalescence was entirely established.

On his return to Harrisburg, about the latter part of October, he enjoyed good health until the following February, when, on being exposed, he again had an attack of fever, which, however, speedily yielded to antiperiodics. It should be stated that the patient had previously been using *quinia* and *iron* in tonic doses daily. During this attack no gastric or biliary derangement manifested itself. The patient for some time afterward continued the use of the antiperiodic tonic. He now enjoyed the best of health; and, up to the commencement of his last illness, his physical vigor was all that could be desired.

On *Tuesday*, *March* 18, 1873, the subject of the foregoing sketch was exposed to a shower of rain, from the effects of which he became indisposed during the night, followed by chill and fever, with pain in the region of the loins. His physician prescribed purgatives, as there was a tendency to constipation, followed by febrifuge and sedative medicines. The pain in the loins persisted, making it a question whether variola might not be an element underlying the case. The attending physician, therefore, wisely preferred to await further developments.

On *Friday*, *March* 21*st*, on the third day of his illness, the patient determined to leave Harrisburg for his home. After a two hours' journey by railroad, he called at my office at 10 A. M. An examination of his case revealed the following facts: As to nutrition, he presented a good appearance; indeed, no indication was visible that any lurking disease existed. The countenance was flushed; eyes slightly injected; skin dry and hot; no yellowness of skin or conjunctiva. Respiration nearly normal; pulse 120, full and strong; tongue coated by a heavy white fur, having an unusual slimy appearance; breath fetid; partial loss of appetite, yet not to the extent that might be expected. No headache; in fact conscious of no pain whatever—the lumbar pain having disappeared. No tympanites nor tenderness on deep pressure of abdomen. Has no tendency to diarrhœa; evacuations thus far have had a normal appearance. Previous to commencement of present disease the bowels have acted naturally. Has had no epistaxis. Urine high-colored. Temperature in left axilla 104°. Patient removed to his home in afternoon—a distance of three miles—very little fatigue resulting therefrom. Slept well during the night without any anodyne; no delirium; perspiration during the night.

March 22d, or the following day, at 3 P. M., patient presented much the same appearance. Has had no chills, as on previous days; has no thirst; in fact, this has at no time been an element in the case. The stomach, which in the early part of the disease had been in an irritable condition, has become pacified. No pain. Patient feels well, with the exception of so-called nervousness. As on previous night, slept well, with free perspiration. Two compound-cathartic pills, given in the evening, produced one evacuation. Temperature, taken at 3 P. M., 104°.

March 23d, or fifth day of the disease.—Condition much as on previous day. Patient not confined to bed; diet soft, consisting of broths, soups, milk, etc., which is taken without inconvenience. Temperature, taken at 3 P. M., 103.5°. Fever now rises at noon, it having thus far risen gradually at a later period of the day.

March 24th, or sixth day of disease.—Tongue commencing to clean at tip and edges, slimy covering is being gradually removed. Has had no delirium. No head or abdominal symptoms. Again administered two pills, producing two evacuations. Appetite fair; eats a soft egg morning and evening. Feels strong and in good spirits. Temperature at 10 A. M., 100°.

March 25th and 26th.—Temperature taken in middle of afternoon; gradually falling as compared with the former observations. From this time to April 2d patient very gradually improving. Tongue nearly clean; slimy covering entirely removed. Temperature has gradually fallen to 100.5° in the afternoon. Pulse has fallen to 90. Bowels have been moved at intervals, two compound-cathartics being given; never producing more than two evacuations. Last pills administered April 1st.

April 3d, there were two spontaneous evacuations.

April 4th, two evacuations, containing considerable blood. Patient not materially weakened. Condition otherwise favorable.

April 6th.—No evacuations; but, during the night, three copious evacuations, which, being examined on the 7th, had the appearance of thin, reddish, bloody serum.

On closer examination, a number of bodies simulating *clots* were discovered, but which, after washing, proved to be something else. These bodies were of different shapes and sizes, some having the shape and size of an almond, while others were larger, being from one and a half to two inches square, and ranging in thickness from one-eighth to one-third and even one-half inch. The detached portions showed a regular surface of attachment to the intestine, bound at its circumference by a narrow, fatty zone. The free surface of some of the detached portions appeared lobulated, in others uneven and irregular. The gross structure of these bodies closely resembled the placenta in its earlier stages of development, ranging from gelatinous to fibroid in character.

The patient now began to show signs of weakness. The pulse became more frequent, and thirst, for the first time, manifested itself. Temperature in the afternoon, 101°. During the night of the 7th the evacuations amounted to nearly a gallon, containing a number of the péculiar bodies. The hæmorrhage now produced great depression; syncope threatening.

The evacuations, examined on the 8th, for the first time had the appearance of real blood, it being moderately thick and tarry. Examination of the patient, on the 8th, showed great restlessness, a continual working of the bedclothes, and great talkativeness, although in the main rational. Pupils moderately dilated. Pulse 120, weak, with a tendency to flagging. Extremities cool; profuse perspiration of head, face, and breast. Temperature 102°. No thirst; loss of appetite; great weakness.

It should be stated that the patient was restless during the two previous nights. In the earlier part of each corresponding evening, sickness of stomach, belching of wind, and borborygmus took place. On one of these evenings a small portion of blood was regurgitated.

April 8th, 8 P. M.—Found the patient in a critical condition. Great restlessness, but no delirium. The sense of hearing is obtuse, but patient starts when his attention is suddenly attracted. Tongue has a brownish coating, but moist. Pulse 150 and wavy. Respirations 45, suspirous; borborygmus, but abdomen normal. No pain on percussion. No evacuations since previous night. But, during afternoon and evening, as well as during the night, a sense of, but without any, evacuation. About midnight tetanoid spasms manifested themselves, great depression ensued, and dissolution appeared imminent. Reaction again took place, however, only to terminate in death on the morning of April 9th, at 6.30 A. M., the twenty-third day of sickness.

Morbid or Pathological Anatomy.—Unfortunately, no autopsy was obtained. It is to be regretted that so interesting and rare a case should have been suffered to pass without our elightenment as to its extent, nature, etc. The body after death appeared shrunken, strikingly bloodless, and without any cadaveric stases on its most dependent parts. In its nutrition it appeared but little wasted, apart from the great loss of sanguineous fluid. On the following day marked decomposition was already in progress, but producing no change on the body so far as was perceptible ocularly. However, on the following day, the third day of the decease, great changes were in progress. Serous infiltration had now taken place to so great an extent as to destroy recognition. The decomposition was marked.

Remarks.—The foregoing case presents facts of interest. Especially does it present features of interest in connection with the diagnosis and prognosis. We have here a type of disease, mild in its manifestations, slow in its decline, and in previous attacks slow in convalescence; moreover, a type of disease, in general, looked upon as devoid of danger, suddenly manifesting symptoms unsuspected, perplexing, and, as the sequel showed, dangerous and fatal. Happily, such cases are rare; but, when they do occur, they are objects of the greatest solicitude. A question arises in connection with this particular case as to the diagnosis. Was the disease malarial, typhoid, or a combination of both, typho-malarial in character? The former attacks, very similar, in fact, strikingly similar to the last attack, the exposure of the patient to miasmatic exhalations of the Tennessee and Susquehanna, his liability to fresh seizures on exposure to rain, their return in the spring, or latter part of the winter, all point to the malarial character and origin of the disease. On the other hand, that the disease was not typhoid fever, is evident from the absence of premonitory symptoms before the several attacks, including the last, the entire absence of epistaxis, a tendency to constipation, as well as abdominal tenderness, the non-appearance of the peculiar eruption, the absence of delirium, the absence of general and muscular prostration, altogether disproportionate to the degree of fever as indicated by the thermometer, point to the conclusion that the disease was not typhoid fever. That the disease was not typhoid fever was again proved by the peculiarities shown by the thermometer. The high temperature on the third day —no observations being made earlier—the surmise of a high temperature dating from the beginning of the disease, according to the sensations described by the patient, all show a condition unlike typhoid fever; at least our experience of such temperatures in typhoid fever is such as to cause us to regard them as a matter of grave import. We have invariably found a high temperature in bad cases, but never in the so-called "walking-cases" of this disease.

The daily range of the thermometer again negatives the supposition of the existence of this disease; the rule being that the thermometer rises about one degree daily, until it attains its maximum with a difference of about a degree in morning and evening temperatures. It, in ordinary cases, thus pursues the even tenor of its way until the decline, when marked evening and morning intermissions occur. But the case under consideration does not follow these rules. Already, on the fifth day, there was a manifest decline of temperature in the afternoon, even as compared with the forenoon temperature of the third day; and, on the following, or sixth day, a forenoon observation showing the great fall of temperature—nearly to the normal—being altogether at variance with the law governing typhoid fever.

Lastly.—Might the disease have been a combination of malarial and continued fever? We think not, for the following reasons: The gradual amelioration of the disease instead of its aggravation; the real improvement, as shown by the gradual establishment of the normal secretions, including the urine and the removal of the peculiar coating of the tongue. On the other hand, the irritation, prostration, and typhoid symptoms could be accounted for by tho loss of vital fluid. The evacuations, of course, were produced by the disengagement of the tumors, and the necessary sanguineous effusion. Taking all things into consideration, we must come to the conclusion that the typhoid-fever element was entirely absent, the disease being malarial, of the character of remittent fever. As to prognosis, every thing appeared favorable until the unexpected manifestation of the complication. The immediate danger, of course, was the hæmorrhage, which in the aggregate must have been two gallons or upward. The suspicion is strong that considerable internal hemorrhage would have been found *post mortem*. The rapid sinking of the patient, the tetanoid symptoms, added to the early and speedy decomposition, would seem to bear out this assertion. The prognosis, as to the future, would have been unfavorable; detachment-resulting hæmorrhage must have necessarily ensued, eventually proving fatal. The connection of the tumors with the fever was, of course, one of coincidence only. How far it was the result of previous malarial impress remains a question. As is well known, as first established by Frerichs, and since corroborated by others, the malarial poison or the results of malarial fever, cause a destruction of the red corpuscles, the *débris* of which choke up certain organs, in some cases producing grave sequelæ. That the tumors were the result of previous malarial poisoning, nothing that we have heretofore been taught would lead us to believe.

Bibliographical and Literary Notes.

ART. I.—*Principes d'Électro-thérapie.* Par le Dr. E. CYON, Professeur de Physiologie à l'Université et à l'Académie de Médecine de Saint-Petersbourg, etc. Paris, 1873. J. B. Baillière et Fils. Résumé by John J. Mason, M. D.

THIS work, of 274 pages, dedicated to Claude Bernard, consists of a brief *avant-propos*, an introduction of 28 pages, and six chapters devoted to the following topics:

I. Description of Apparatus.
II. Electro-physiology.
III. Electro-physiology of Man.
IV. Action of Electricity on the Different Organs of the Human Body.
V. Methods of making a Diagnosis by the Aid of the Electric Current.
VI. Differences in the Effects produced by the Induced and Continuous Currents.

The writer, in the introduction to his book, calls attention to the fact that no real progress has been made in the science of electro-therapeutics since the appearance of the remarkable works of Duchenne and Remak; that one cannot open a treatise on electro-therapeutics and find a page which does not contain shameful faults, not only against the most elementary principles of physics and physiology, but also against simple common sense. "Badly-observed or purely-invented facts, ridiculous theories, extravagant hypotheses, impossible explanations, and marvellous cures are mixed in together, modified by a false appearance of scientific investigation, and covered by a veil of mystery."

The reason for this deplorable condition of electro-therapeutics is to be found in the fact that the therapeutist continues to deny the utility in pathology of new physiological acquisitions of which he has no idea. Instead of behaving as if there were such a thing as modern physiology, he devotes his time to the discussion of old theories which science has long since rejected. "Ignorance of physiology, and, above all, of electro-physiology, has been one of the causes determining the confusion which reigns to-day in electro-therapeutics."

There is but one reply to make to the pathologist who asserts that, although the observations made by him are opposed to the principles of physiology, they are none the less scientific facts. Has he sought to utilize all the means of observation which science has generously placed at his disposal? What does he know about physiology, and does he know that little well? Why has ophthalmology taken the first place among the medical sciences? Let the readers of Helmholtz, Donders, A. Von Graefe, Giraud-Teulon and others, answer. Why has the diagnosis of diseases of the chest and abdomen attained such a degree of scientific precision? Because we know *now* the physical and physiological conditions of these parts.

Is it possible to witness the same transformation in neurology and electro-therapeutics? Can the same precision be attained in the application of electricity to the treatment of diseases of the nervous system? This depends upon the limits which we assign to the scientific basis on which alone we must rely. General principles must first be established before electricity can be rationally applied. There are too many experiments which tend to introduce the *therapeutic* method into *physiology* rather than the reverse.

Instead of endeavoring to lower the science of physiology to the deplorable level of electro-therapeutics, we should try to elevate the latter to the high rank of the former. Every physician, who seeks to find this scientific basis for electro-therapeutics, ought at first to study for several years, in proper laboratories, the physics and physiological action of this wonderful agent. He ought not to expect to know any thing about it without this practical training.

No author of a work on electro-therapeutics, up to the present time, has made a serious effort in this direction. Two things, therefore, are necessary—either for the mountains to remain where they are, or for some Mohammed to volunteer to go to them.

Dr. Cyon then proceeds to give the motives which have influenced him to take up the difficult and thankless task of laying some scientific foundations for the application of electricity as a therapeutic agent.

For several years he had been engaged in the study of neuro-pathology and electro-therapeutics. He knew personally the first electro-therapeutists of Europe, and had assisted Remak several hours daily, for eighteen months. Here he had an admirable opportunity of observing the great need of a more solid foundation. He had *seen* the cases put down in the books as "cured," and knew only too well how little the expression was worth.

"If, in spite of all this" (opposition from all sides, which he anticipated), "I applied myself to the solution of this difficulty, it was because I had acquired the conviction that therapeutics possessed in electricity a remedy far surpassing all those yet known; I felt that a great future was in store for this remedy, and that it would become of the highest utility, so soon as its effects were exactly understood." And then, further on, he says: "In order to guard against the reproaches of physiologists, I proceeded in these researches with the same scientific precautions as in a question purely physiological; and I hope that, in this entire work, there cannot be found a single assertion for the soundness of which I would not answer *vis-à-vis* the physicist and physiologist."

In his first chapter, describing apparatus, the animus of the book appears early. The habit of recommending apparatus, which requires little knowledge of physics on the part of the physician, is strongly denounced in these terms: "We render no service to therapeutics by lowering it to the level of an ignorant physician; it would be much more desirable to raise the physician to the height of science."

Static electricity he leaves unnoticed, as having, in his opinion, no application in medicine. In his treatment of the law of Ohm he shows evidence of his training in the German schools, e. g., he uses the letter Q to denote the sectional area of a conductor (Querschnitt).

The laws of accessory circuits, induction currents, and extra currents, are very clearly presented. For therapeutic use, the elements of Siemens and Halske are recommended, and, for graduating the intensity of the current, the employment of the *rheostat*, which is carefully described. If columns of water are employed as rheostats they should be included in an accessory circuit, and not in the principal circuit.

Chapter II. is devoted to electro-physiology of animals. In the first two sections are given, a history of the subject and the actual condition of the science of animal electricity. In sections 3 and 4, he treats of the study of the irritation of nerves and muscles in general, and the science of electrotonus. To Prof. Edouard Pflüger, of Bohn, he justly gives all the credit of bringing order out of chaos in this department, and indorses his theory about the part played by the appearance of catelectrotonus, and the disappearance of anelectrotonus. The rest of this chapter is devoted to an able and concise statement of the theories of Du-Bois Reymond, and the more recent essays of Bernstein, on the nature and duration of the negative oscillation of the current.

In his introduction to the next chapter, we find him saying: "We cannot apply to the human body the physiological laws that we have obtained experimentally on animals. . . . It becomes, therefore, important to study physiology directly on the human body, and create methods which ought to be employed at the sick-bed." After alluding to the contradictory experiments of Erb and Eulenberg, on electrotonus in man,[1] he proceeds to give a detailed account of his own experiments. The principal difficulties to be met are first stated:

1. That of finding a motor nerve near the surface of the body and accessible for a sufficient distance, so that the two currents (continuous and faradaic) may be brought to act upon it simultaneously. 2. That of maintaining the electrodes in a fixed position, so as to avoid by their displacement sudden fluctuations of current density. 3. That of irritation of the nerve caused by pressure of the electrodes. 4. That of separating perfectly the two currents from each other. 5. That of finding an exact indication of the conditions of irritability of the nerve. 6. That of eliminating a change of irritability, which a series of excitations might produce.

The ulnar nerve was selected to meet best the first source of difficulty, the voltaic current being applied to that portion situated above the elbow, and for the reason that here the nerve is placed very superficially and in a straight line for a considerable distance. Moreover, the branches of this nerve supply the muscles, whose contractions were to be measured by the monographium. To examine the irritability of the nerve, two electrodes from the secondary coil of an induction machine were employed, and placed, one just above the elbow, and the other at the articulation of the carpus with the ulna; both electrodes being thus placed below those of the modifying current. The whole arm was covered with a plaster-mould, in order to avoid displacement of the nerve, and the electrodes fastened securely together to prevent fluctuations in the current.

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[1] He does not refer to the experiment of Helmholtz, who succeeded in demonstrating electrotonus in man, to the satisfaction of Erb, who at first denied its existence. (*See* article by Erb, in "Yhases Bericht," 1867, vol. i., p. 509.)

Pressure on the nerve was avoided by placing the poles on the plaster instead of directly on the arm.

In order to have a satisfactory indication of the amount of muscular contraction obtained by the same degree of irritation applied under different conditions, a very ingenious form of myographium was constructed, and the adductor pollicis muscle was chosen to work the apparatus.

Erb and Eulenberg tested the irritability of the nerve by noticing with the eye the minimum amount of excitation (as denoted by the distance separating the two coils of the induction machine) which was necessary to produce a contraction. In order to fix upon this minimum, they were obliged to test it by a series of excitations, which of themselves were capable of altering the irritability of the nerve. By employing a myographium, Prof. Cyon was able to test the question by the same method as that employed by Pflüger on the sciatic nerve of the frog.

For the modifying current, a battery, consisting of twenty to twenty-five elements of Siemens and Halske, was used. The electrodes employed were small plates of brass, presenting about half a centimetre of surface, and distant from each other never more than five centimetres.

The exciting current was obtained from the apparatus of Du-Bois Reymond. The results of four experiments are then cited in tabular form, two on the effect of the descending current, and two on that of the ascending current.

These researches were only made on the extra-polar portion of the nerve between the pole and the muscle. The examination of that portion of the nerve above the region traversed by the continuous current is very difficult, from the fact that the nerve-impulse which is awakened by excitation applied at this point must traverse the portion of the nerve through which the continuous current is passing. Now, this current so alters the conductivity of the nerve, that it is almost impossible to give an accurate interpretation of the results obtained.

"The laws which regulate the action of the continuous current on the nerve, and which were discovered by Pflüger for the nerves of frogs—these laws preserve all their validity for the nerves of man, at least in their essential parts."

A new field is therefore opened for experimentation in diseases of the nervous system, treatment, and diagnosis. Diagnosis becomes more difficult, but no more so than that of diseases of the internal organs, such as the heart, lungs, kidneys, etc.

Section 4 is devoted to a brief description of his myographium, and some considerations on the dependence of the extent of muscular contraction on the intensity of the irritation applied to the nerve.

The myographium used in these experiments consists of a metallic rod vertically attached to the table on which rests the arm to be examined.

From an horizontal support, attached at right angles to the rod, is suspended, by means of a spiral spring, a metallic ring, which supports the thumb. Attached to this ring is a lever, the long arm of which unites upon a revolving vertical cylinder, by which means both the amount and duration of the contractions may be noted.

The last two sections of this most valuable chapter contain an account of some other effects of electricity on nerve and muscle, the "voltaic alternatives," and the law of J. Rosenthal, together with a brief *exposé* of the actual state of our knowledge in regard to electrical influence on the nerves of special sense.

The experiments of Helmholtz on the effect on the optic nerve (of different current directions), as denoted by various sensations, are cited, and those of Brenner summarily disposed of as follows:

"I will not give here the singular theories of Brenner, as I have several times repeated his experiments without ever being able to confirm them. This attempt at verification has succeeded no better in the hands of other observers worthy of credence."

Drs. Wreden and Loewenberg have demonstrated that the "acoustic reactions" of Brenner are produced by tension or relaxation of the tympanum; that this alteration of its form must be produced by contractions of the muscles which are attached to the ossicles of the ear.

In Chapter IV., an able attempt is made to show the error of confounding the specific energy of a nerve with electric irritation. The latter is always the same, whether it act upon motor, sensitive, "regulating," or "secretory" nerves, altering their molecular condition so as to call forth the specific energy of each. A short section is devoted to a statement of the results obtained by Eckhard in his experiments on the specific resistances of the tissues of the body, the degree of conductivity of each being directly proportional to the amount of water which they severally contain.

We next have a rational explanation of localized faradization discovered by Duchenne, which he concludes by the following: "Many electro-therapeutists fancy that it is sufficient to employ an incomprehensible manœuvre, in order to obtain miraculous cures. They therefore introduce into therapeutics a series of new methods of application, an enumeration of which does not appear to be necessary."

Direct galvanization of the brain he renounces altogether, for reasons which appear in a translation of this section, published in the May number of the JOURNAL.

Galvanization of the spinal cord, on the contrary, both on account of the ease with which it can be employed, and the successes which have attended it, deserves to rank among the most useful of the methods of the application of electricity in medicine.

It is an error to suppose that the spinal column offers an obstacle to the passage of the current through this organ, since, from the principle of accessory circuits, the greater the resistance of the bony structures, the greater the amount of electricity which passes to the cord through the openings between the vertebræ. Fortunately, the muscular layer is not thick in this region, and, by using small electrodes, and pressing them well into the spaces beside the spinous processes, the cord becomes the shortest route for the current, and strong currents may be dispensed with. The induced current should never be employed here.

The section in which galvanization of the sympathetic is considered is very interesting and instructive. The cervical sympathetic is only one portion of this system of nerves presiding over the vessels of the ear, eye, face, and some parts of the brain, and hence it is assuming too much to pretend to cure muscular atrophy of the muscles of the thigh by galvanizing the sympathetic in the neck.

After alluding to the discovery of the depressor nerve by Ludwig and himself, the absurdity of applying the current to the anterior portion of the neck is pointed out. Three nerves, the vagus, depressor, and sympathetic, are acted upon simultaneously by this method, so that no constant result can be obtained. The application to the vertebral-artery plexus is recommended as preferable when we seek to influence the circulation in the brain.

When on the nerves of special sense, he expresses himself as averse to accepting, as a new function for the fifth pair, that of causing reflex irritation of the optic nerve (as claimed by Althaus), especially as we have no need of such an hypothesis to explain the production of luminous appearances. There is no reason why the current does not act directly on the optic nerve, on the principle of branching currents.

In employing electricity as a means of diagnosis in diseases of the nerves, the distinction between the physiological function of these parts and electric excitation must be always borne in mind.

Duchenne has given us the expressions "electro-muscular contractility and sensibility," which are the fruits of a neglect on his part to recognize perfectly the above rule. Irritability of the muscles is a property of these organs distinct from that of contractility. The muscle may lose its irritability for the electric current, and still may contract under the influence of the will or chemical agents, and we have no right to say from this that it has lost a specific kind of contractility, for there is but *one kind*, by whatsoever means it may be induced.

The best solution which Dr. Cyon has to offer for those perplexing cases in which muscles preserve their capacity of contracting to the impulse of the will, while they have lost it to the influence of the electric current applied either to the nerve or muscle, is stated as follows:

"We are forced to conclude that the nerves preserve their conductivity, while they, along with the muscles, have lost their irritability."

He considers the use of the æsthesiometer, barosthesiometer, and thermo-æsthesiometer, as furnishing means of diagnosis of alterations of cutaneous sensibility, far more exact than that which can be obtained by electricity.

He denies, *in toto*, the supposition that the sympathetic nerve can become "sensitive" by disease, and may thus afford a means of diagnosis.

"If there is a contradiction between pathological and physiological facts, it is because the former have been badly observed." The deplegic contractions of Remak are due to an increased irritability of the cord due to the action of the current.

The concluding chapter of this work gives us a clear *exposé* of the difference in the effects produced by the continuous and induced currents.

Remak's views were not *so much* opposed by electro-therapeutists on account of the attitude which he assumed toward the advocates of the induced current, as on account of the insufficiency of their education in physics and physiology, i. e., the facts discovered by Du-Bois Reymond, Pflüger, Faraday, and Becquerel. The two currents, physically speaking, only differ from each other in their *duration* and *intensity*.

The experiments of Dr. Neumann are given, proving that the reason of the great difference in the action of the two cur rents in cases of paralysis consists in the difference in their duration. In the case of the induced current, time enough does not elapse between each shock to produce the electrotonic condition in the nerve. The continuous current from fifty elements, when interrupted rapidly, failed to produce contraction in the paralyzed muscles.

Another cause of difference is the suddenness with which the induced currents enter and leave the tissues, and this is to be well distinguished from duration of the current. The force of irritation produced on the nerve is in a measure proportional to this suddenness of entrance and exit of the current.

A third cause of difference is to be found in the continual change in the direction which takes place in the succession of induced shocks which we call a current.

The following points are essential as furnishing indications of capital importance in therapeutics:

1. The constancy of the battery-current.
2. Its great electrolytic power.

In considering the other points of difference, both currents may be interrupted or not. Here we compare an interrupted induced current with a constant continuous current, and the difference becomes still more palpable.

a. The continuous current should be used in cases of paralysis, in which the muscles do not respond to the induced current.

b. To obtain excitation, the induced current should be employed.

c. When we wish to produce excitation in the neighborhood of important organs, the continuous current is preferable.

d. To increase or diminish irritability, modify conductivity, stop degeneration, etc., we should employ the continuous current. On the vaso-motor system the oscillations in intensity, which, although slight, are persistent, replace well the normal tonic stimulus from the nerve-centres.

e. "Leaving out of consideration the treatment of aneurisms, it is not possible, in the actual state of science, to lay down scientific principles for the application of electrolysis in medicine."

Duchenne's error in attributing a different effect to the currents from the primary and secondary coils is clearly exposed.

ART. II.—*Diseases of the Urinary Organs: including Stricture of the Urethra, Affections of the Prostate, and Stone in the Bladder.* By JOHN W. S. GOULEY, M. D., etc., etc. 8vo, pp. xviii.–368. New York: William Wood & Co., 1873.

THIS work, as may be inferred from the title, is not a complete treatise upon the diseases of the urinary organs, but is intended to treat of some of the gravest conditions occurring in the male urinary organs, "by pointing out means for their early detection; for lessening the difficulties of their management; and indicating, in cases of emergency, what to do and what to avoid" (preface).

The first 258 pages are devoted to the consideration of the grave subject of "Stricture of the Urethra" and its results. Spasm of the urethra and inflammatory retention are eliminated, leaving only one variety, permanent or true stricture, involving change of structure.

In the chapter devoted to "Diagnosis," etc., the various bougies, catheters, and sounds, are described; also the endoscope and Otis's urethral speculum; the latter being favorably mentioned. Urethral fever is considered in this chapter, in relation to which the following statement occurs on page 33:

"It is a well-established fact that urinary or urethral fever, arising from violence to the urethra or bladder, is 'due to shock propagated by the sympathetic nervous system, and reacting upon the blood and vascular system,' and that there is some analogy between this ailment and malarial fever; hence the additional title of *intermittent* urethral fever."

It may be a question how "well established" this opinion is. There is good reason for supposing that urethral fever, like gonorrhœal rheumatism, is a mild type of pyæmia. The success following the administration of large doses of quinine in the hands of the author rather lends support to this view.

In the *treatment* of stricture, the author calls attention to the fact that in all stages surgical interference is indispensable to success, and that, in cases subject to operative procedures, dilatation must be continued at intervals indefinitely. The means furnished are in accordance with those generally adopted, the following rules being given for choice in the procedure: 1. The incipient stage, in which there is granular urethritis, may be overcome by "*pressure and distention by sounds and direct applications to the diseased surface.*" 2. In fully-developed strictures "dilatation" is sufficient in the majority of cases, and no other operative procedure should be tried until this has failed. 3. In obstinate strictures of the deeper part of the urethral canal, "divulsion," or splitting, is recommended; but, occurring, 4. In the pendulous portion, "internal urethrotomy" should be performed. 5. "External perineal urethrotomy" should be resorted to, other means having failed, in impermeable, resilient, or very irritable strictures; narrow traumatic strictures; retention or extravasation of urine from impassable strictures, or rupture of the urethra; obstinate fistulæ; and in rupture of the bladder from stricture. The employment of "caustics" is discountenanced.

In cases of extravasation from rupture of the urethra, the following practical suggestion occurs on page 241:

"I think it good surgery, providing the patient be seen within twenty-four hours of the occurrence of extravasation, to make at once external perineal urethrotomy with or without conductor. . . ."

Also in case of impending rupture of the bladder from impassable stricture or lacerated urethra (page 247):

"The duty of the young practitioner, in such circumstances, is to meet the immediate demands of the case, i. e., to relieve tension and to provide for the escape of urine, if he does not wish to take the entire responsibility of managing the case to its end. The patient should at once be held in the lithotomy position—but should take no anæsthetic—and, with a sharp scalpel, a clean incision should be made in exactly the median line of the perinæum, extending from the scrotum to within an inch of the margin of the anus, and involving all the tissues down to the urethra. This would give free egress to the urine, and leave the patient in the best condition for any operative process that might be decided upon after consultation. If such a plan had been pursued in the case under discussion" (complete traumatic laceration of the urethra at the bulbo-membranous junction), "there would have been no rupture of the bladder."

The author copies Little's description of the aspirator, published in this JOURNAL. While it is of much use in cases of retention from prostatic swelling, in cases of impermeable stricture relief from its use can be only temporary.

Dr. Gouley, as is well known, is averse to the retention of the catheter in perineal sections.

This portion of the work is quite fully and well considered, and supplied with reports of cases illustrating nearly every conceivable emergency.

The portions of the work devoted to the consideration of "Diseases of the Prostate," and "Stone in the Bladder," although not so complete as might have been expected in a special treatise, are, nevertheless, very practical. Considerable space is given to the description of "median lithotomy" (Allerton's method), the author mentioning it quite favorably in cases requiring the knife. Favorable mention is also made of "perineal lithotrity"—Dolbeau's medium section of the perinæum, dilatation of the prostate and neck of the bladder by means of the "dilator," and fragmentation of the stone. Dr. Gouley believes "this method is destined to supersede Mr. Atherton's." The author urges against the endeavor to extract large stones whole, claiming that the danger from leaving unremoved the last "fragment," is a "bugbear," and predicts that "the time will soon come when surgeons will take a special pride in showing detritus rather than specimens of large calculi."

The latest devised instruments are described and represented by woodcuts, in connection with the description of the cases requiring their use, the author's modifications being especially noticed. While the work will hardly serve the purpose of a complete treatise, it is a valuable addition to those already in use.

The book makes a pretty appearance, but the reader has an unnecessary amount of paper and book cover to pay for.

Art. III.—*The Medical and Surgical History of the War of the Rebellion. Part I., Medical Volume, with Appendix. Part II., Surgical Volume.* 4to. Prepared in accordance with Acts of Congress, under the Direction of Surgeon-General Joseph N. Barnes, United States Army. Government Printing-Office, Washington, 1870.

The military events of the late war of the rebellion have been recorded by great numbers of authors and writers, and have become parts, and most important and instructive parts, of the world's history.

The lives and performances of the principal actors in the struggle have been written and rewritten, and taken their places in the memories, thoughts, and conversation of the people. At a later period appear the first two parts of the medical and surgical history of the great struggle.

It has been foreshadowed from time to time by *brochures*, circulars, and more especially by the splendid catalogue of the Army Medical Museum, until the interest and anxiety of the profession, and the literary and scientific public, became wrought up to the highest pitch. The volumes before us are cordially welcomed, and the expectation with which they were awaited, so far from being disappointed by an examination of the work accomplished, and the promises implied in its completion, is elevated into a sentiment of admiration, almost astonishment.

The two departments of medicine and surgery respectively are introduced by prefaces from the Surgeon-General of the Army, and by elaborate introductory articles from Lieutenant-Colonel George A. Otis, Assistant-Surgeon U. S. Army, and Lieutenant-Colonel J. J. Woodward, Assistant-Surgeon U. S. Army, the editors-in-chief of the respective departments.

These documents give the outline of the methods primarily adopted to secure the materials necessary for the complete history, and evince the forethought, intelligence, medical and military capacity, the patriotism, and love of science and humanity, as perfectly represented by the medical profession, which influenced and guided the surgeon-general's office in laying down its plans *in limine*, with reference both to immediate practical conduct and practice, and literary, historical, and scientific record. The work so far accomplished approves the plans of its originators; the completed result will, without doubt, realize the ideal standard.

The war took the country by surprise. Few persons believed in the possibility of such a catastrophe; and many honestly thought, when it actually became imminent, that the end would be in the destruction of the republic.

The army had mostly lost the traditions and lessons of the Mexican War, and it was not habituated to act together, or to encounter military events on a great scale.

These characteristics applied with equal or greater force to the medical department. A few military surgeons in private life realized the emergency, and some among the regular military medical officers understood and comprehended the condition. Suddenly, however, as if by magic—but which was simply the practical application of acute intelligence, the study of the medical history of the Crimean War, and the reports of the British Sanitary Commission, and the writings of Florence Nightingale, aided by common-sense and the habit of the American mind, which ignores space, natural obstacles, and expense, in carrying out its objects—the armies of the country were organized, and the medical department put upon a footing equal to the emergency. Medical officers who had passed their lives at frontier posts suddenly became medical directors of armies, and discharged their functions with commensurate ability, or became chiefs of large surgical hospitals, and performed their duties with the skill and success of experienced metropolitan surgeons.

The people, after a momentary shock of horror at the dread and sickening casualties of war, came to the aid of the profession, and, as the friends of the family, brought supplies and succor in untold abundance.

The profession in civil life quickly transformed itself into a military medical staff, and almost every man in the profession performed services more or less arduous and important.

The great works before us are a result of the methods adopted in the beginning, and the zeal and labor of the profession at large, directed, systematized, and coördinated by the trained skill, practical literary and scientific experience, discipline, and labor of the officers of the Medical Bureau at Washington, as organized by Dr. William A. Hammond, while at the head of the medical department.

The great portion of the Medical Volume is taken up with statistical tables. These tables give the results in figures of disease and mortality, for the several months of each year, in the different regions, departments, and districts.

The tables are arranged in such a manner as to illustrate the influence of climate and season, and are invaluable contributions to medical topography. They are especially valuable to professed statisticians and students of climatology, and will be useful to sanitarians and hygienists for all time to come. The dryness of the figures is relieved by the intensely interesting personal reports and narratives of surgeons, private physicians, and medical directors of armies, corps, and divisions, in the Appendix. These selections are made with care and strict impartiality, and give a wonderfully graphic picture of the military-medical history of war.

They reveal the labors, hardships, trials, and sufferings of troops in the field, the inevitable miseries of wounds, disease, and death, and the heroic efforts to mitigate these troubles, as far as human foresight, skill, and knowledge, are capable of doing.

Dr. Woodward has added to his reputation, already established, by the method and success with which he has conducted this portion of the work. He brings to bear exhaustive knowledge, exact science, and indefatigable labor, supported by a genuine enthusiasm. The future volumes will illustrate the pathology of the diseases enumerated in the tables, and we are at liberty to say that the materials are in a forward state of preparation.

In the introduction to the Surgical Volume, page xxviii., Dr. Otis remarks: "That the experience acquired during the war should have added largely to every subject connected with military surgery was not to be anticipated. But it may be safely asserted that in many directions it has advanced the boundaries of our knowledge. Even in the very difficult field of investigation presented by the wounds and injuries of the head, we have learned something. Surgeons have been schooled to deal with the most ghastly injuries of the face without dismay, to obtain unexpected results, and to accomplish favorably reparative operations from which formerly they would have recoiled; and they have been taught the futility of tying the great arterial trunks of the neck for hæmorrhage from face wounds. The true principles of treatment of wounded arteries in the neck are now generally understood; and while, before the war, there were few surgeons who chose to undertake operations on the great vessels, there are now thousands who know well when and how a great artery shall be tied. Our information respecting injuries of the vertebral column has been augmented; and, passing to the wounds of the chest, we find a complete revolution in theory and practice. Without further illustration, we may claim that the additions to surgical knowledge acquired in the war are of real and practical value. On those topics in which the materials at his disposition merely corroborated or confirmed views already generally entertained, the editor has sought to be concise, and to enlarge on those subjects to which some material addition to our knowledge has been brought by the observations made during the war, either because of novelties in nature or in treatment, or through the large number of rare or of analogous cases permitting the occasional presentation of crucial instances and the more frequent application of the theories of averages and probabilities. Though the labor upon matters of detail, inseparable from carrying out instructions to regard the 'preservation of the great mass of facts collected in a form for convenient study,' as the chief object in view, has generally confined the editor's attention to the arrangement and grouping and illustration of the observations, he has sought, whenever time and opportunity permitted, to facilitate the student's inquiries by analyses and summaries, and references to the surgical results of other works, without abstaining from critical comments; but censuring bad practice, intending no discourtesy to individuals, nor violation of the '*homines amare, errores immolare*,' precept of St. Augustine."

The above quotation gives a correct idea of the spirit in which Dr. Otis pursues his work. He, equally with Dr. Woodward, is a devotee, and an unselfish and self-sacrificing devotee, to science. He labors faithfully to extract the essence of surgical truth from the materials placed at his disposal, and without going at the present time into detail, we believe that the conclusions to be arrived at, from an examination of the completed history and from the editor's commentaries, will be found almost identical with the abstract idea of surgical truth, and that these volumes, and the aphorisms to be deduced from their correct study, will improve and direct the surgical mind of the country. It is to be remembered that these works are the intellectual analysis of the medical and surgical mind of the country at the period when the materials were collected, and the results with cyclopean labor wrought out in the bowels of the Medical Department at Washington. Every man thought, every man spoke, every man acted. We offer these works to the world as the Minerva of our medical brain. By them we must stand or fall, for we are all equally responsible, while many of us have reason to be grateful for errors and mistakes rectified, and good things in us, which we did not suspect, brought out.

This volume, in addition to the preface and introduction already mentioned, contains a "Chronological Summary of Battles and Engagements," and surgically—

1. Special Wounds and Injuries of the Head.
2. Wounds and Injuries of the Face.
3. Wounds and Injuries of the Neck.
4. Wounds and Injuries of the Spine.
5. Wounds and Injuries of the Chest.

These chapters are subdivided, to meet all the ramifications of both accident and treatment, and are copiously and beautifully illustrated. We refrain from entering into any surgical examination in this brief paper, for the reason that our space is limited, and if we commenced, like many medical conversations, it would go on all night. We have, however, given some study to these cases both at the time of the occurrence of many of them and in the elegant form in which they now reappear, and we must say that we can find little fault; not any to which the editor has not applied the remedy of his acute touch—

"Acu rem tetigisti."

In obedience to the rule by which we are bound, and expecting that an elaborate and exhaustive notice and review of the completed work will be presented when it *is* completed, we thus conclude our introduction of the first parts of the work to the medical public, while acknowledging it to be a mere formality (for they and it have been *par nobile fratrum* for many years), with a few general observations.

The edition is too limited, and Congress owes it to the medical profession of the country to place a copy in every public library and in the hands of every physician who served during the war. By library we include the South, for much excellent material was obtained from Confederate records and many excellent contributions to military medicine and surgery were made by Confederate surgeons. We were pleased to see the resolutions which were adopted by the American Medical Association at its late meeting, and we hope they will be complied with. We recommend every State and county medical society to add their voices, and petition for an enlarged edition for the purposes above mentioned, and also for sale at cost.

This work is more than a contribution to science—it is a contribution to humanity. It illustrates the true character of the medical profession, and it brings science and humanity closer together. It is a powerful argument against war; and a work of instruction and experience to provide against the calamities of war. It demonstrates the value of scientific medicine to the welfare of states and nations, and proves that the apparently most hopeless calamities are oftentimes susceptible of relief.

It is an honor to national literature and a credit to the national character. It is something to be more proud of than any mechanical invention, inasmuch as it surpasses in spirit and intention any of the forces of Nature.

We have authentic information that the material for the forthcoming volumes, two more in each series, is in rapid course of preparation.

The publication of the Medical and Surgical History brings the profession at large and the Medical Department of the Army into closer harmony. It ought to have the effect of giving greater weight and dignity to the practice of medicine, improving medical education, extinguishing diseases, and educating the public to a higher standard of appreciation of the value of their bodies, and perhaps, as a consequence, of the value of their souls.

ART. IV.—*Manual of Chemical Analysis as applied to the Examination of Medicinal Chemicals. A Guide for the Determination of their Identity and Quality, and for the Detection of Impurities and Adulterations. For the Use of Pharmaceutists, Physicians, Druggists, and Manufacturing Chemists, and of Pharmaceutical and Medical Students.* By FREDERICK HOFFMANN, Ph. D., etc. 8vo, pp. 393. D. Appleton & Co., 1873.

THIS volume contains in a nutshell the information which should be in the possession of every druggist and of every physician who is in the habit of dispensing his own medicines. It is enough to make one shudder when he thinks of the possible adulterations contained in every-day prescriptions. If every druggist made a practice of testing the quality and purity of his drugs, and at the same time holding the manufacturers responsible, thereby instituting more care in their preparation, we can conceive of the benefits which might accrue to the country.

Our author, in the first part of the work, treats of "operations and reagents, including a brief outline of a systematic course of chemical analysis, and of volumetric estimation." The chapter on "Reagents" is very complete and accurate, so far as we have observed, and is condensed within a space sufficient for the convenience of the inquirer; that upon "Qualitative Analysis" is also to the point and clear.

Passing to the second part, we find it to treat fully of "the medicinal chemicals and their preparations, their physical and chemical characteristics, with directions for the examination of their quality and purity," the author noticing about all the compounds and many of the simple vegetable preparations in use. Many tables, of value to every physician for reference, are given. The book presents a creditable appearance—the woodcuts are very well executed, but, if we were disposed to criticise, we should say that some of them were needlessly repeated.

ART. V.—*The Pharmacopœia of the United States of America. Fifth Decennial Revision. By Authority of the National Convention for Revising the Pharmacopœia.* Held at Washington, A. D. 1870, 12mo, pp. xxi.–383. Philadelphia: J. B. Lippincott & Co., 1873.

OUR readers are already familiar with Dr. Squibb's able review of the new Pharmacopœia. The work commences with a few pages devoted to "Preliminary Notices," in which are included directions and explanations in regard to "Weights," "Temperature," "Measures," "Percolations," "Fineness of Powders," etc. The "Materia Medica" consists of "Primary" and "Secondary" lists of the adopted articles, with names in Latin and English, definitions, and such alterations in comments as the committee have seen fit to introduce.

Next follows the list of "Preparations" with their formulæ and descriptions. Twenty-seven articles are added to the Materia Medica, and eighty-two preparations are added to the pharmacopœia. Five are dismissed from the former and seven from the latter.

Tables of changes in articles, names, etc., are also given. Changes in the nomenclature have been made in order to keep pace with the "progress of chemical science." The salts of alkaline metals are named after the particular metal, as, potassii chloras is written for potassæ chloras, etc., etc. A copious index closes the volume.

There is no question as to the importance of the services rendered by the committee; many of the preparations added are entirely new, and a judicious selection has been made. It would seem, however, that some other articles which have become pretty well tested by experience might have been made officinal, as bromide of lithium, apomorphia, etc., but these omissions are small faults, and perhaps the articles were insufficiently tested at the time the committee took action. The work has our hearty commendation.

ART. VI.—*The Passions in their Relation to Health and Diseases.* Translated from the French of Dr. X. Bourgeois, Laureat of the Academy of Medicine of Paris, etc. By HOWARD F. DAMON, A. M., M. D. Boston: James Campbell, 1873.

WE have read the above-named book, and have laid it aside with a feeling of disgust and mortification that an American physician, of any professional standing, should have wasted so much valuable time in translating its prurient pages. If this book had been presented to the public in a different garb, and *minus* a certain professional air given it by the names of medical men, one as author, the other as translator, we are sure that it would never be allowed transit through the United States mail, but would be classed with other obscene matter.

The most astounding portion of the book is the translator's preface, in which he recommends its perusal to our wives and daughters, as likely to prove beneficial to them. What! Shall we place before our modest wives and innocent daughters the story of depraved lives and libidinous practices which make one's cheeks burn with shame and indignation to even see recorded, and have them simply learn from it that vice is often attended by well-marked nervous affections, which readily yield to doses of St. Ignatius's bean, quinine, or iron!

It is not possible to close this short notice without expressing our unqualified disapproval of such works as the above, and to pray that in the future no member of the medical profession, a profession founded on love and purity, not on illicit passion and obscenity, will again pervert his high talents by bringing to the surface a work like this, which should have never been conceived, and which should now be buried so deep that the most depraved would never be made worse by its perusal.

BOOKS AND PAMPHLETS RECEIVED.—The Mineral Springs of the United States and Canada, with Analyses and Notes on the Prominent Spas of Europe, and a list of Sea-Side Resorts. By Geo. E. Walton, M. D., Lecturer on Materia Medica in the Miami Medical College, Cincinnati. 1 vol., 12mo, 390 pages, with Maps. New York: D. Appleton & Co., 1873.

A Treatise on the Principles and Practice of Medicine; designed for the Use of Practitioners and Students of Medicine. By Austin Flint, M. D., Professor of the Principles and Practice of Medicine in Bellevue Hospital Medical College, etc., etc. Fourth edition, carefully revised. Philadelphia: Henry C. Lea, 1873.

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Reports on the Progress of Medicine.

THEORY AND PRACTICE.

1.—*On the Treatment of Acute and Chronic Bright's Disease.* By George Johnson, M. D., F. R. C. P., Physician to King's College Hospital, Professor of Medicine in King's College, London, etc. [British Medical Journal, August 6, 1872.]

I adopt the definition given in the *Nomenclature of Disease* published by the Royal College of Physicians: "Bright's disease is a generic term, including several forms of acute and chronic disease of the kidney, usually associated with albumen in the urine, and frequently with dropsy, and with various secondary diseases resulting from deterioration of the blood." The term Bright's disease is nearly, but not quite, synonymous with renal albuminuria.

The causes of renal albuminuria arrange themselves in two main divisions:

1. A mechanical impediment to the escape of the venous blood from the kidney, as from disease of the heart or lungs; the pressure of dropsical fluid in the abdomen; sometimes probably the pressure of the gravid uterus.

2. An abnormal condition of blood is by far the most frequent cause of albuminuria. Thus albuminuria occurs not infrequently as a result of scarlatina, diphtheria, erysipelas, typhus and enteric fever, pyæmia, cholera, measles, purpura, gout, etc. The albuminuria which sometimes occurs during the early stage of pregnancy is probably a consequence of blood-changes associated with that condition; while that which occasionally fol-

lows parturition is, in all likelihood, a result of absorption of septic materials from the uterus.

Thus, albuminuria may result from a primary mechanical hinderance to the movement of blood, or from a primary change in the quality of the blood. On the present occasion I shall exclude from consideration that class of cases in which albuminuria is a result of a mechanical impediment to the circulation, and consequent passive congestion of the kidney. My remarks will have reference only to the more numerous second class of cases—cases of albuminuria the result of abnormal states of blood. I shall endeavor to make my remarks as practical as possible, with only so much of reference to pathological theory as may serve to guide or to explain practice.

The extreme frequency of renal disease is a physiological result of the kidney forming one of the main channels by which effete and noxious materials are cast out of the circulation. During the process of excretion, the kidney-tissues—primarily the gland-cells, secondarily the blood-vessels—undergo structural change. A leading principle of treatment is to lessen as much as possible the excretory work of the kidney, more especially in cases of acute Bright's disease. The main points are—rest in bed, in a room of moderate uniform temperature; a carefully-regulated and a somewhat scanty diet; the adoption of means to promote a free action of the skin and bowels.

In all cases of acute Bright's disease, rest in bed is an essential part of the treatment. In a large proportion of cases, this with a scanty diet will suffice for the cure. The diet may consist of milk alone, if it suits the patient's stomach, or milk with an egg or two in the course of the day, or with the addition of beef-tea or other animal broth. Under this regimen the urine soon becomes copious, while the albumen diminishes and gradually disappears.

The copious flow of urine which usually occurs during convalescence from acute Bright's disease is thus explained. During the acute and congestive stage of the renal disease, the constituents of the urine—both solids and liquids—have accumulated in the blood, and have thence been effused into the areolar tissue and into the serous cavities. Now, urea is a most powerful diuretic. When injected into the veins of a dog, it quickly excites a copious flow of urine; and no sooner is the inflammatory congestion of the kidney removed, and thus the freedom of the renal circulation restored, than the urea retained in the blood begins to exert its natural diuretic action upon the kidney. The copious flow of urine thus induced speedily removes the accumulated urinary solids and water from the blood, the areolar tissue, and the serous cavities, into which they had been effused, and thus the dropsy is cured.

This abundant flow of urine occurs without aid from diuretics or drugs of any kind. I have seen it occur while a bread-pill or colored water was given as a placebo. Stimulating diuretics, such as squills, or cantharides, or turpentine, would be injurious, by increasing congestion of the kidney. The best diuretics in such cases are those means which tend to lessen renal congestion—dry cupping or hot fomentations over the loins, hot-air- or water-baths, purgatives, and a scanty diet, with a free use of diluent drinks—one of the best and pleasantest drinks being the "imperial drink," made with cream-of-tartar and lemon.

When the renal congestion is extreme, as shown by the scanty secretion of highly-albuminous urine, local bleeding by leeches or cupping on the loins is often extremely useful. If by the abstraction of a few ounces of blood from the loins we relieve the renal congestion, we shall check the rapid destruction of blood-constituents which results from uræmia; moderate local bleeding, therefore, tends to economize blood, and to prevent its waste.

It has been asserted that cupping or leeching the loins can help an inflamed kidney no more "than if the blood had been taken from the arm or from the nape of the neck." But this, surely, is a mistake. The lumbar arteries, which supply the integuments of the loins, arise from the abdominal aorta, close by the origin of the renal arteries; and, when leeches or cupping-glasses draw blood through the skin of the back, it is certain that the diminished pressure within the lumbar arteries will divert a certain quantity of blood from the neighboring renal arteries. The same principle explains the good effects of leeching in cases of pericarditis. The internal mammary artery sends deep branches to the pericardium, and superficial branches to the intercostal spaces and the skin. By the application of leeches over the heart, we abstract blood from the integumentary branches of the internal mammary artery, and thus divert a portion of blood from the deeper pericardial branches. The blood will as surely take the course indicated by diminished pressure within the vessels as the water in a pump will, up to a certain height, follow the rising piston. It may be thought that the quantity of blood thus diverted is very small: so, in the case of venesection being practised in the arm or neck, how scanty is the stream of blood which escapes from the opening in the vein compared with the torrents of blood rushing through the venæ cavæ into the right side of the heart; and yet, in a case of obstructed circulation through the heart or lungs, how promptly and decidedly does this small diverted current lessen the distention of the whole venous system. Hot fomentations or poultices on the loins act by relaxing the superficial arteries! The skin, therefore, receives a larger supply of blood, and thus a portion of blood is diverted from the renal arteries. Then, too, there is some degree of depletion from the full cutaneous capillaries by the free local sweating which the warmth occasions.

Dry cupping acts in a somewhat similar way to hot fomentations. It draws an abundance of blood through the arteries into the subcutaneous capillaries, which, when the cups are removed, returns through the veins to the heart. In order that dry cupping may be most effectual, each cup should be removed as soon as the vessels beneath are well filled, and then it should be reapplied. The object is first to draw the blood through the arteries into the capillaries; then to allow it quickly to return by the veins, and not to keep it stagnating in the capillaries, which will happen if the glass be retained long on one spot. Another point is not to draw the blood into the skin with sufficient force to cause extravasation, the effect of which will be to impede the circulation through the skin, and so to divert more blood into the inflamed tissues beneath. The sole object of dry cupping, be it remembered, is, not to irritate the skin, but to draw blood rapidly from the arteries, and as rapidly to transmit it through the capillaries to the veins, in its backward course to the heart.

As a rule, it is well to give no alcoholic stimulants; or, if need be, to give them very sparingly in cases of acute Bright's disease. The imbibition of alcohol imposes extra work upon the kidney, and so is opposed to the principle of lessening as much as possible the work of the inflamed gland. Excess of alcohol is a not infrequent cause of albuminuria; and a very moderate employment of alcohol may tend to perpetuate and aggravate disease.

Not long since, a man was admitted into King's College Hospital, completely narcotized by a surfeit of wine, which was pumped from his stomach in large quantities. The urine drawn off from the bladder contained a large amount of albumen. In a few hours the man recovered consciousness, and the urine became normal. The temporary albuminuria was a result of renal congestion while the excess of alcohol was being excreted by the kidneys.

When acute Bright's disease is making satisfactory progress toward recovery, the dropsy usually disappears for a variable time before the urine ceases to be albuminous. It is very important to impress upon the patient that, until the urine has regained its normal character, he must be extremely careful to avoid cold, fatigue, and errors of diet.

The duration of albuminuria in cases that ultimately recover is very variable. I have seen many cases of recovery after the disease had continued for from three to twelve months; and I have seen some recover after the urine had been albuminous for one, two, three, and in one case four years.

The more I have seen of the disease, the more hopeful I have become as to the ultimate result, when the history and the symptoms, and, above all, the chemical and microscopical characters of the urine, do not indicate extensive and irremediable degeneration of the kidney. In all the cases of recovery from long-continued albuminuria, the preparations of iron have entered largely into the medicinal treatment of the disease, and have apparently contributed much to the favorable result. There are two preparations which I believe to be especially useful: these are the tincture of the perchloride and the syrup of the phosphate. I believe that they are best taken with the food. I have frequently combined with each dose of the perchloride of iron ten grains of hydrochlorate of ammonia; and I believe that this ammonio-chloride of iron is a useful combination.

Among other remedial agencies, when acute renal disease is prolonged, and threatens to become chronic, change of air and scene is often highly beneficial; and I have seen some most remarkable recoveries effected under the influence of a long sea-voyage.

There are few diseases which, during their progress, cause more varied and severe suffering than confirmed chronic Bright's disease in its various forms. As the symptoms vary in the different forms of chronic renal disease, so a varied treatment is required in the different classes of cases. Without entering into minute pathological distinctions, for which we have now no time, I purpose to say a few words on the treatment of some of the more frequent and distressing symptoms.

In one class of cases—cases of large white kidney, with a scanty secretion of highly-albuminous urine—dropsy is usually a prominent symptom. The tendency to dropsy is without doubt increased by the dry and inactive state of the skin; and this condition of skin seems to be mainly due to the hypertrophy of the muscular walls of the minute subcutaneous arteries. This excessive muscularity of the small arteries enables them to resist the relaxing effect of external warmth, so that a hot-air bath often fails to excite diaphoresis. Patients who do not perspire under the influence of a hot-air bath, usually complain of painful throbbing in the head, difficulty of breathing, and other distressing sensations. So frequently is this the case that, in cases of chronic renal disease, I am now in the habit of substituting for the hot-air bath a prolonged packing in a wet sheet, surrounded with blankets. Patients often remain packed for periods varying from one to three or four hours, not only without distress, but with comfort and decided relief.

Diuretics are notoriously uncertain in their action. I have often obtained good results from the imperial drink, in doses of from one to three pints in the twenty-four hours. A very efficient diuretic is a strong infusion of fresh broom-tops, taken in sufficient quantity to act as a purgative. The free action of a hydragogue purgative, elaterium, compound jalap-powder, or compound gamboge-pill, is very commonly followed by a copious flow of urine. The escape of water by the bowels lessens the distention of the systemic veins, the circulation becomes more free, and therefore the secretion of urine more copious.

When other means fail to remove anasarca, acupuncture of the legs, or an incision with a lancet, often affords prompt and decided, and sometimes permanent relief. I have seen a considerable number of cases in which life has been prolonged, and some in which complete recovery resulted, from the operation, after other means had failed to afford relief. It is very interesting to note the phenomena which follow upon acupuncture or incision of the legs in cases of anasarca. There is, first, a copious drain of liquid through the skin; then there is a further exudation of liquid from the over-distended blood-vessels; this liquid also escapes through the punctures, and its escape is often associated with temporary symptoms of exhaustion, a rapid and feeble pulse, and pallor of the face. Lastly, there often occurs a more copious secretion of urine, in consequence of the greater freedom of the circulation through the kidneys.

Dropsical accumulation tends to cause a secondary impediment to the circulation, by the pressure of the effused liquid from without upon the blood-vessels, especially the veins. Again, the capillary circulation becomes more and more impeded in proportion to the increasing watery distention of the veins. The drain of liquid from the areolar tissue through the punctured skin, allowing a further exudation from the distended capillaries, thus removes or lessens the obstruction which results from overfulness of the veins. The general circulation, therefore, becomes more free, and the greater freedom of the circulation through the kidney is attended, as we have seen, by a more copious secretion of urine. But it may be objected that incisions and punctures in anasarcous legs are apt to excite destructive inflammation. It is true that inflammation and sloughing may follow the operation; but this may also occur from over-distention of the skin or the pressure of the heavy dropsical legs upon the bed. The result of my experience is, that inflammation of anasarcous legs has been as often subdued as provoked by acupuncture or incision; that inflammation is less likely to follow punctures in cases of renal than cardiac dropsy; and that the risk of inflammation after an incision about a third of an inch long in each leg, or after several acupunctures, is so nearly equal that I would in any case give the patient or the surgeon the choice of the operation. If I were the patient, I should choose the incision, as being on the whole less painful, and more rapidly and surely efficacious.

Dyspnœa is one of the most frequent and distressing symptoms associated with Bright's disease. It has various causes, and requires various remedies. When it results from œdema of the lungs, or dropsical hydrothorax, it is best treated by the remedies for dropsy. In some cases, anæmia appears to be the chief cause of dyspnœa. The red blood-corpuscles are the oxygen-carriers. When the blood—whether in cases of chlorosis or of Bright's disease—contains an excess of water with a corresponding deficiency of red corpuscles, and defective oxidation of the tissues, the demand for air expresses itself in hurried and laborious breathing. The remedy for this form of dyspnœa is to be sought for in the elimination of water, a carefully-regulated nutritious diet, and iron as a restorative tonic.

Paroxysmal dyspnœa in some cases appears to be of cardiac origin. The heart's action is rapid and feeble, or slow and feeble, the breathing distressed and hurried, with loud puerile respiration over the lungs. The dyspnœa in these cases seems to be due to the influence of deteriorated blood upon the pulmonary and cardiac nerves. It is not improbable that the cardiac weakness in some cases results from excessive contraction of the minute branches of the coronary arteries, and consequent anæmia of the muscular walls of the heart.

These distressing symptoms are often relieved for a time by ether or by brandy; and lately I have found that an occasional small dose (ten grains) of hydrate of chloral has done good. The cardiac and pulmonary symptoms to which I have referred are almost certainly made worse by opium in any form. There seems good reason to believe that in the hydrate of chloral we have a remedy by the cautious use of which we may for a time mitigate some of the nervous symptoms which occur in the advanced stages of incurable Bright's disease. I refer particularly to the cramps and muscular twitchings, which are frequent precursors of convulsions, and the distressing restlessness which, associated as it is in a greater or less degree with uræmia, is generally aggravated by opiates.

The sufferers from Bright's disease are always dyspeptics, and the gastric symptoms are often very obstinate and distressing. When in consequence of renal degeneration the blood is contaminated by retained urinary excreta, there is often a vicarious excretion of these impurities by the mucous membrane of the stomach and bowels. The gastric secretions are mingled with the ammoniacal products of decomposing urea; digestion is consequently impaired; there is flatulent distention of the stomach and bowels, nausea, vomiting, and diarrhœa. Relief is to be sought by a carefully-regulated diet, and by giving with the food from ten to twenty drops of dilute hydrochloric acid with a vegetable bitter. A small dose of strychnia, or the tincture of nux vomica, with a mineral acid, is sometimes especially efficacious. Pepsine may sometimes be given with advantage.

In some cases of advanced renal degeneration, the vomiting is so incessant that the patient has to be sustained by nutritive enemata, while iced water only is taken by the stomach. In some instances that have come under my observation, the straining and exhausting efforts of vomiting have been checked only by frequent whiffs of chloroform-vapor.

In conclusion, I have only to add that I shall be happy, so far as I am able, to answer any questions upon the various points which I have passed in review. I shall also be glad to receive practical hints from those who by their experience are enabled to give them.

SURGERY.

1.—*Removal of the Right Half of the Thyroid Gland for Fibro-cystic Disease.* By EDWARD M. HODDER, M. D., F. R. C. S., Professor of Obstetrics in Trinity College, Toronto. [Canada Lancet, December, 1872.]

MISS A., aged eighteen, a very healthy and well-grown young lady, perceived a swelling at the side of the larynx, and nearly in a line first with the thyroid cartilage, about two years and half ago.

It gave her no pain, yet it increased rapidly for the first six months, at the end of which time it had acquired the size of a pullet's-egg; it now remained stationary for a time, neither appearing to increase nor diminish, and during this period various means were used to promote absorption, the different preparations of iodine and lead being the principal.

Although it did not apparently increase in size outwardly, yet it must have done so toward the median line, as it pressed upon the œsophagus, rendering deglutition both difficult and painful, and upon the larynx, as it seriously affected the voice, making it husky, and preventing her from singing.

These symptoms gradually increasing, she was anxious for its removal, and consulted a medical man in the part of the country in which she resided. Supposing it to be a simple cyst, on the 10th of April, 1872, an operation was attempted, but the surgeon in attendance, finding the attachments much firmer and deeper seated than he expected, and having divided the external jugular vein at an early stage of the operation, wisely contented himself with cutting off the upper portion of the tumor, securing the vessels, and closing the wound.

The patient states that the portion removed was about the size of a hen's-egg, *cystic*, containing a thick, starchy substance; that there was much loss of blood during the operation, but none afterward; that the ligatures came away in about three weeks, and the wound healed without suppuration. She remained well for about two months after the operation, when the tumor again began to grow, accompanied by sharp, stinging pains, and her voice had never regained its former tone, although somewhat improved—now, as the tumor increases, the voice becomes more and more husky.

This young lady's mother was supposed to have ovarian tumor, and was sent to me for operation, the daughter accompanying her mother to nurse and attend her.

Failing to detect any ovarian disease, no operation on the mother was required, but the daughter thought it a good opportunity to get rid of a disease which greatly disfigured her, as well as producing much pain and inconvenience in respiration and deglutition.

After a very careful examination of the tumor, finding the upper and projecting portion very movable, and not at first being able to trace any deep-seated attachments, I, like the surgeon who had operated in April, could hardly believe that it was disease of the thyroid gland, but, upon a closer and more minute examination, and finding that it moved with the larynx, and from the history of the case, I made up my mind that it was fibro-cystic disease of the gland itself, and, as the disease was increasing, and as it already pressed injuriously upon the œsophagus and larynx, I consented to remove it.

October 31, 1872.—This day was fixed for the operation, and, accompanied by my friends Drs. Temple and Cook, we proceeded to the house; and after another careful examination and consultation with my friends we decided upon its removal. Every thing being ready, and chloroform given and watched carefully by Dr. Cook, I commenced the incision downward and forward in the course of the cicatrix, to obviate greater deformity, and then directly downward, and by careful dissection I soon exposed the upper and more projecting part of the diseased mass. I continued my dissection to the lower angle of the wound, and was ably assisted by Dr. Temple, who retracted the more important vessels and nerves, so as to enable me to get to the pedicle or root of the gland. Although the body of the gland did not partake of the fibro-cystic condition of the upper and more projecting portion, yet it was very considerably enlarged, projecting backward and inward, pressing strongly upon the œsophagus, larynx, and upper part of the trachæa, and was very firmly attached to the lower and posterior border of the thyroid cartilage, and to the crico-thyroid membrane. During the latter part of the operation I was materially assisted by Dr. Temple seizing the body of the gland with a pair of toothed forceps, and drawing it outward which enabled me to get at the root or firmest attachments.

Its removal required careful and minute dissection, and was effected in great measure by the finger and handle of the knife, with occasional touches of the blade.

There was a good deal of hæmorrhage during the operation, principally venous, but, the external jugular having been divided in the first operation, I was saved from the risk of dividing that vessel. Two arteries, the superior and inferior thyroid, alone required ligatures, and a few twigs were twisted.

After the removal of the gland, the carotid, pneumogastric, œsophagus, the thyroid and cricoid cartilages, were distinctly seen; the wound was left open until all oozing had ceased, and was then closed by several points of suture, a piece of dry lint, with a few strips of plaster and a bandage, completing the dressing.

I wish here to record my thanks to the two gentlemen who so ably assisted me, for, short-handed as we were, and a formidable operation, the difficulties would have been greatly increased, had they not anticipated every touch of the knife.

After the removal of the tumor it was found to be the right lobe of the thyroid gland entire, the upper half being about the size of an egg, and fibro-cystic in character, which formed the projecting portion, the cysts containing a grayish substance somewhat like sago in appearance and consistence, the upper and larger cyst having been torn by the forceps during its removal; the lower half, and that portion which pressed upon the œsophagus and trachea, was about four inches long, and appeared healthy, although very much hypertrophied.

November 1st.—She passed a quiet night, but without sleep; voice feeble; deglutition painful and difficult; pulse quiet; no febrile excitement, no bleeding or pain in the wound.

November 2d and 3d.—Doing well. On the 4th, removed the dressings; the lint was not even stained, and the wound was found to be completely united throughout.

November 6th.—The points of suture were removed to-day, union is perfect, no suppuration. The voice is somewhat restored, and all pain in swallowing has ceased.

November 16th.—Ligatures still firm, otherwise not a bad symptom. Her mother returns home to-day, and she has asked permission to accompany her, promising to come back the beginning of the week.

November 20th.—Ligatures still firm; in every other respect quite well.

Remarks.—I am induced to publish this case because the operation is one of rare occurrence, the majority of surgical writers not even hinting at the removal of this gland by the knife; the few who do, speak in the strongest manner against surgical interference.

This operation was not one of great severity, there was no great loss of blood, no vessels or nerves of any importance wounded, no great constitutional shock; it was not followed by any inflammation, no suppuration took place, the wound uniting throughout by the first intention. It was simply a careful dissection on the living body, where one false step might have been followed by serious, if not fatal consequences.

I should strongly caution the younger members of the profession, living in remote country towns and villages, from attempting the operation, unless assisted by a competent staff of practitioners accustomed to operations; and this remark applies equally to other serious and dangerous operations.

2.—*A Case of Fibro-cystic Bronchocele. Removal of the Right Half of the Thyroid Body.* By GEORGE E. FENWICK, M. D., Professor of Clinical Surgery, McGill University. [Canada Medical and Surgical Journal, November, 1872.]

MARIE M., aged twenty-one years, a French Canadian, was admitted into the Montreal General Hospital on the 23d May, 1872, with an enormous fibro-cystic tumor of the thyroid body. She is a robust, healthy-looking young woman, and is the second child of a family of twelve. The tumor commenced to grow when she was three years of age, and attained its present size when she was about seventeen, since which time she says it has appeared to remain stationary. It consists of three lobes, a huge central mass, and two lateral, measuring seventeen and a half inches in circumference. There is considerable pulsation of the arteries, evidently communicated by the carotids, and the veins look large and tortuous. The lobes feel perfectly distinct, are very heavy, weighing, apparently, several pounds, and the whole mass is raised in the act of swallowing. When seen by Dr. Fenwick he stated that the removal of the tumor by operation might be accomplished, but at great risk of the life of the patient. On the 29th May the central mass was tapped with a small trocar, and about ℥ ij of bloody serum was drawn off. The cyst was then injected with ʒ iv of tinct. iodine, two other punctures were made at points which felt like cysts, and but a small quantity of fluid of the same character removed, and about ʒ j of iodine injected into each. In a few days the patient had recovered from the effects of an attack of iodism, consequent on the injection, and she left the hospital. As, however, the patient suffered from increased difficulty in breathing, she returned to the hospital on the 7th June, and a consultation of the hospital staff was summoned for the following day. The patient declared her determination of submitting to the operation, as she said that her life, under existing circumstances, was a burden to her. The patient was removed to the operating theatre and placed under the influence of chloroform, and Dr. Fenwick, assisted by Drs. Fraser, Howard, Reddy, and the house-surgeon, Dr. Roddick, proceeded to the removal of the mass.

The method adopted in the performance of the operation was that recommended by Prof. Green, of Portland. The incision was made in the median line, extending the whole length of the tumor to the upper part of the sternum, getting down at once to the tumor, and dividing what Green terms its "fascia propria." There was no difficulty then in enucleating the mass; it was rapidly turned out with the finger, the dissection being carried outward. In getting to the posterior edge the veins appeared large in size, being spread out and at the same time incorporated in the mass of the tumor. It was at this point that the difficulty arose; in continuing the dissection with the finger backward, the veins seemed to tear like paper, and the effusion of blood was sudden and enormous in quantity. This, however, was controlled after some difficulty, and ligatures applied. The superior and inferior thyroid arteries, which appeared small, were ligated; the mass was found to extend in the interspace bebetween the trachea and œsophagus, and the latter was exposed for about three inches of its extent. Coming to the pedicle, which appeared adherent to the side of the trachea, and which was about the size of two fingers, it was decided to cast a ligature around it and remove with the knife the tumor. This being done, no further hæmorrhage occurred. The edges of the wound were brought together by eight interrupted sutures and the patient removed to bed. The tumor was nodulated, composed of three distinct masses, the central one of which, when cut into, consisted of a cyst which held about six ounces of fluid. Before opening the cyst the tumor was found to weigh two pounds and fourteen ounces, and consisted almost entirely of hypertrophied gland-structure intermixed with fibroid tissue. An hour after the operation, the report states, the pulse was 90, regular, but weak. The girl complained of great thirst; brandy-and-water with beef-essence had been ordered, but was rejected, there being considerable irritability of the stomach. Iced champagne was substituted for the brandy.

Six o'clock in the evening, the patient still very weak. The pulse had risen to 120, was weak and flickering. An enema of beef-tea, ℥ ij, with brandy, ℥ss, was ordered to be repeated every half-hour. The champagne was retained, and was agreeing well with the patient. Toward midnight the pulse rose to about 150, as did likewise the temperature of the body, which went up to 106°. As she seemed restless and uncomfortable, with no inclination to sleep, half a drachm of tr. opii was given in camphor-water. This had the desired effect of allaying the restlessness which existed, and she slept between the intervals of administering the nourishment and stimulants. The tendency to vomit was also arrested, so that on the following morning she had very much rallied from that alarming state of prostration which had followed the operation. From this time she made a rapid recovery. Considerable suppuration followed, the wound filling up and closing by granulation. The ligatures separated and came away; three on the 20th June, the twelfth day, three more on the day following, and the last ligature separated on the 14th July, being the thirty-sixth day after the operation. Slight secondary hæmorrhage followed the separation of the ligatures, but was easily controlled. The wound had entirely closed by the 29th July, on which day the patient left the hospital.

With regard to the operation itself I feel convinced of its feasibility, but would remark that if called upon to perform a similar operation I should proceed somewhat differently, as I think it would be better to separate the mass first from its central attachment, dissecting beneath the tumor from the median line, by which means the operator would arrive at the origin of its vascular supply and thus avoid much of the effusion of blood which, to a certain extent, is unavoidable.

Translations.

Extra-Uterine Abdominal Pregnancy.—A case terminating in the expulsion of the products of conception by the anus is quoted in the *Gaz. Med. Ital. Lombard.*, March 15th, from the *Racoglitore Medico.* A woman was seized, in the seventh month of her fourth pregnancy, with lumbar and abdominal pains, which were followed by a considerable metrorrhagia, accompanied by fainting and all the phenomena of acute anæmia. The nurse, having found that the uterine orifice was scarcely dilated, that the uterus was not distended, and that the size of the abdomen was independent of the size of the uterus, immediately summoned the physician, who promptly controlled the hæmorrhage by a vaginal tampon and the application of cold to the hypogastrium. On examining the abdomen, there was felt an enormous and hard globular tumor, with a regular surface, occupying more especially the left side of the abdomen. By percussion, a tympanic sound was obtained on the right side, flat on the left. Auscultation revealed neither cardiac sounds nor fœtal movements. There were all the signs of a very acute entero-peritonitis. Dr. Giuseppe Tenderini, to whom the woman had recourse, was in doubt between the existence of an ovarian cyst and an extra-uterine pregnancy. One day, after the expiration of a number of months, there passed from the anus, together with the fecal mass, a milky, extremely fetid liquid. These evacuations were repeated every day, and contemporaneously the volume of the abdomen diminished. The condition of the woman improved little by little. One day she was seized by an extremely urgent desire to defecate, but, notwithstanding every effort, she was unable to produce an evacuation. At last, losing patience, she introduced a finger into the rectum and, to her surprise, it came in contact with a globular body which broke from the pressure of the finger. She succeeded in extracting several pieces of a laminated form, since recognized as bone. Numerous other pieces were subsequently evacuated, all being without periosteum or cartilage. The patient made a complete recovery. A year afterward she commenced to menstruate regularly, and every trace of the abdominal tumor had disappeared.

Peculiar Skin-Disease in Children.—Uffelmann (*Archiv für Klin. Med.*, 1872) has observed a peculiar disease of the skin in children, affecting females by preference, very similar in appearance to erythema nodosum, usually having its seat in the lower extremities, but occasionally also in the arms. The disease manifests itself by round knots, in size from a pea to a pigeon's-egg, which are situated in the subcutaneous connective tissue, are movable and only tender on pressure, and are usually covered by reddened skin. They are aggregated or disseminated on the limbs according to the number of knots, from six to thirty. The portions of skin surrounding them are slightly swollen, without being œdematous or having increase of temperature. There is no inflammatory implication of the veins or lymphatics. The knots gradually disappear without local medication, not accompanied, however, as in erythema nodosum, by exfoliation of the epidermis or the greenish-yellow discoloration of the skin. The chief characteristic of this lesion is the severe constitutional disturbance which accompanies it. Without any marked febrile action (at most an elevation of one per cent.), there are marked pallidity of the face and of the visible mucous membranes, great muscular debility, an aversion to play, and much gastric disturbance. The author has always found a marked diminution of the red and considerable increase of the white blood-corpuscles. No important lesion of internal organs was found. After the disappearance of the knots, the characteristic symptoms of anæmia, which were well marked during the progress of the disease, remained for some time. The disease affects only delicate individuals, and, according to Uffelmann's observations, without exception, those only with a tendency to hereditary phthisis, and the author does not hesitate to establish a connection between the two diseases. Syphilis could not be traced. Treatment consists of improving the constitution. Besides proper dietetic regulation, the preparations of iron are indicated.

The Physiological Influence of Iridectomy.—It is generally admitted that the beneficial effect of iridectomy in glaucoma depends on a diminution of the intra-ocular pressure; it is, however, unknown in what manner this diminution of pressure is accomplished. S. Exner, after experiments on the iridectomized eyes of dogs and rabbits, has arrived at a satisfactory explanation of this relation. It is well known that intra-ocular pressure depends upon the amount of blood in the intra-ocular vessels. Exner has found, in eyes injected two to four weeks after operation of iridectomy, which was performed analogous to that in man, that the small arteries arising from the circ. art. major of the iris and running toward the pupil have wide communications, on the surface of the wound, with the veins which lie in a deeper stratum, and allow the blood of the iris to enter the venous plexus of the ciliary body. In place of the plexus of the excised portion, wide anastomoses have been substituted, which allow freer drainage into the veins. The vascular pressure in the arteries and in the circ. major is therefore diminished, and, as the latter is also in communication with the recurrent rami of the choroid, the same effect is produced in these. The importance of excising a large portion of the iris is therefore evident, and the inefficiency of iridodyalisis is explained. For, by the latter operation, the connection between the concerned portion of iris and the choroidal vessels ceases, and diminution of pressure cannot occur in the remaining portions of the iris nor in the choroidal vessels. It is to be understood that in iridodyalisis the entire circ. art. major remains attached to the detached margin of the iris, and that in iridectomy only such portions of the iris are removed as lie within the circ. art. major toward the pupil. Exner has convinced himself of both facts. On the other hand, he is disposed to believe that a disturbance may arise in the circulation of the circ. art. major from cicatrization of the iris.—*Centralblatt*, January, 1872.

Treatment of Ulcers with the Sharp Scoop.—Schede (*Centralblatt*, January, 1873) finds this instrument indicated in the treatment of the following diseases: 1. Ulcerations of the skin and cellular tissue in scrofulous subjects, with flabby granulations and undermining edges. These granulations can best be removed by this instrument, with which deep sinuses may also be reached. After complete removal of the morbid granulations, the surface soon becomes covered with healthy granulations, and cicatrization takes place in a short time. Similar conditions are often found in rectal fistulæ. 2. Glanular ulceration. In this case, a single removal does not always suffice, and it is sometimes necessary to have recourse to the knife and scissors to accomplish entire removal of the gland. 3. Peri-articular fistulæ. 4. Caries of joints, in which the use of the scoop supersedes all other means of operation, and, when used in combination with resection, secures a better chance of success, renders it easier of performance, and obviates the necessity for amputation. 5. Caries, osteitis, and osteo-myelitis. Five cases of caries of the mastoid process are reported which were cured after the use of the scoop; it is also indicated in scrofulous and syphilitic ozæna and syphilitic skin-diseases. 6. Neoplasms, and especially cancers of cavities, the entire removal of which by operation is not possible: cancer of uterus, vagina, rectum, and pharynx. Central mye-

loid tumors of the jaw have also been subjected to the above treatment, though the scoop is less adapted to sarcomata than to cancers, a circumstance of some diagnostic value.

Means of correcting the Bitter Taste of Medicine.—Concentrated saccharine solutions modify the taste of most bitter medicines, rendering them more acceptable to the palate. The infusion of gentian is extremely disagreeable, while the syrup may be readily taken, provided no water is added to enfeeble the action of the sugar. The substance, however, which possesses this curious property in the highest degree, is glycyrrhizine, the sweet principle of the liquorice-root. If, after taking quinine, colocynth, aloes, quassia, or other bitter medicines, a piece of liquorice-root be chewed in the mouth, the bitter taste will quickly disappear. No chemical change takes place, but the effect seems to result from an incompatibility of taste. An analogous action takes place between bitter-almonds and musk, between anise and valerian. If, for instance, we attempt to clean a mortar, impregnated with musk, by adding the essence of bitter-almonds, the odor of the musk promptly disappears, but returns in its primitive force as soon as the former has evaporated. The essence of bitter-almonds, therefore, masks for the moment the odor of musk without destroying it, and the same result may be said to follow when glycyrrhizine acts on bitter substances. Owing to the insolubility of quinine in alkaline fluids, the saliva would remove it from the mucous membrane very slowly, and glycyrrhizine, to be effectual in destroying its bitter taste, should be kept in contact with the gustatory organs as long as any particles of the quinine remain there.—*La France Médicale*, March 12, 1873.

Peri-arthritis of the Shoulder-Joints.—Injuries of the shoulder very frequently have as a sequel an inflammation of the tissues of the neighborhood of the shoulder-joint, especially of the sub-acromial serous bursa and of the connective tissue lying between the deltoid muscle and the capsule of the joint. Induration and atrophy of these tissues follow, causing great difficulty in the movements of the arm, but this condition differs from any intra-articular process by the absence of all deformity. The symptoms are: 1. More or less complete suspension of motion in the joint; rotation of the scapula simulates a moderate movability. 2. Pain on attempting motion while the scapula is fixed; tenderness on pressure over the coracoid process; occasional formication in the arm. 3. Occasionally there is flexion of the elbow-joint, and extension causes pain in the elbow flexure and at the coracoid process. The treatment consists in laceration of the adhesions under aæsthesia, upon which there usually follows no reaction. After-treatment is often necessary to prevent stiffness.—Duplay, in *Arch. Gén. de Méd.*, November, 1872.

Conception with Imperforate Hymen.—Braun (*Wien. Med. Wchschr.*, 1872) reports this condition in two cases, in which the impossibility of the *immissio penis* was evident. In the first, a woman in the last month of pregnancy, not even the finest opening could be detected in the hymen, which presented itself as a brownish-yellow, flat membrane, with a tough epidermis. The vagina opened into the lowest portion of the urethra, 0.5 centimetre behind the urethral orifice, which was about as large as a hemp-seed. The treatment consisted in dividing the membrane in the median line; a normal vagina was opened into, and the operation was followed by a successful labor. The second observation belongs to the class of *so-called* imperforate hymen, in which the hymen allows the passage of at least fine probes. In this case, two deep lateral incisions sufficed to open into a wide vagina. It is stated of the last patient that she "menstruated regularly;" of the first, this is also asserted, and it is to be presumed that the blood was discharged by the urethral orifice.—*Centralblatt f. Med. Wissch.*, 1872.

Influence of Carbolic Acid on Pyæmic and Septic Infection.—The influence of carbolic acid in preventing pyæmic and putrid infection having recently been called in question, J. Rosenbach has experimented on dogs and rabbits by injecting pus subcutaneously with or without the addition of carbolic acid. When freshly evacuated or decomposed pus was injected, phlegmonous inflammation, general constitutional disturbance, increased temperature, lasting several days, and finally death, resulted, while an injection with five per cent. of carbolic acid caused only the local formation of abscess without general symptoms. The addition of one-fourth per cent. had no effect; of one per cent. caused only slight constitutional disturbance. Pus which had become decomposed by exposure to air, and had the odor of sulphuretted hydrogen, did not seem to lose its general infecting power by the addition of five per cent. of carbolic acid.—*Centralblatt*, January, 1873.

Influence of Cumin and White Agaric on the Secretions of Milk. (*La France Médicale*, March 29, 1873.)—M. Barbaste, in a communication to the *Revue Médicale*, says that in Dauphiny the peasants are in the habit of giving cumin-seeds to their cows for the purpose of causing a return of the arrested secretion of milk. He also states that a woman in Saint-Marcellin uses this successfully as a secret remedy for this purpose among the country-women. In the cases of three nurses, whose secretion of milk had failed in consequence of fever, M. Barbaste employed this remedy with complete success.

White agaric has a contrary effect. Dr. Joulin was first induced to try it for the purpose of arresting the secretion of milk, from its known influence on the cutaneous secretion in phthisis. His first case was that of a primipara who became very much reduced in consequence of a premature secretion of milk six weeks before the child was born. The secretion was promptly arrested, and did not return till after the birth of the child. Dr. Joulin also reports a number of other cases where the remedy was equally successful. White agaric is given in doses of from fifteen to twenty-five grains, four times a day. It is to be continued for several days after the cessation of the secretion, and the dose progressively diminished.

Urinary Fistula of the Umbilicus.—Guéniot (*Bulletin de Thérap.*, October, 1872) reports a very rare case of urinary fistula at the umbilicus, due to a continuance of the urachus, in a male child, ten and a half months old, which he cured by means of the ligature. There are only six other cases of this condition on record, from which two varieties may be classified: 1. The urethra is occluded, all urine, therefore, passing through the fistula. 2. The urethra is pervious the greater portion of urine passing through it and but a small quantity through the umbilicus. In the first case the treatment consists, above all, in removing all urethral obstruction. The opening of the fistula usually lies at the apex of a small tumor which is caused by invagination of the mucous membrane lining the urachus. The treatment recommended by Guéniot consists in ligating this tumor and gradually tightening the ligature, in which manner two of these fistulæ have been healed.—*Centralblatt*, January, 1873.

Dysuria.—Where there is difficulty in urinating, from stricture or other causes, and the sound does not readily pass, M. Casenave (of Bordeaux) introduces a smooth piece of ice, about the size of a chestnut and of an oval form, into the rectum. The ice should be shoved past the sphincters and renewed from time to time. Almost always, after an hour or two, the urethral spasm abates, a certain quantity of urine is evacuated and the bladder is emptied without extraordinary expulsive efforts on the part of the patient. In extreme cases it is also advisable to apply pounded ice externally from the anus to the end of the penis. The same procedure is applicable to retentions of urine caused by hypertrophy of the prostate; but in these cases the good effects are more slowly produced.—*La France Médicale*, April 9, 1873.

Treatment of Opacities of the Cornea with Sulphate of Cadmium.—M. Ansiaux has successfully employed the following preparation: Cadmii sulph. 0.06 cgr., mucilag. gum-arabic, tr. opii, āā 8 grs. The dose of sulphate of cadmium must be gradually augmented, if easily tolerated. It is borne up to 60 cgrs., though it is rare that such a dose is necessary. A camel's-hair pencil being dipped into the collyrium, is passed over the opacity, and the patient is then ordered to keep the eyelids closed to prevent drainage by the tears. The application should be repeated three times a day. Laudanum having previously been recommended in the treatment of corneal opacities, the large number of cures obtained by M. Ansiaux might be attributed to its employment; it must be remarked, however, that success has been attained with this prescription after the exclusive use of laudanum.—*Paris Médicale*, February, 1873.

Tracheotomy with the Galvano-Cautery.—This operation, first performed by Verneuil, has recently been repeated by Voltolini, in a man thirty-six years of age, who suffered from a berry-shaped neoplasm in the larynx, which threatened suffocation by impinging on the glottis from below. The operation was easy, and accompanied with but slight hæmorrhage. The removal of the neoplasm was deferred till a fortnight after the tracheotomy, when it was found to have almost entirely disappeared, and the author ascribes its shrinkage to the action of the cautery. The advantages of the operation are evident; the only obstacles to its extension in practice being the difficulty of procuring the apparatus in time, as in croup.—*Berl. Klin. Wochschr.*, 1872.

Treatment of Condylomata.—Dr. Boise destroys these small tumors with pure liquid carbolic acid, or in a very concentrated solution; he applies the caustic to the neoplasm with a pencil, taking care to spare the surrounding parts. Often, after a single application, the tumor becomes hard and blanched (mummified), and falls off without leaving any ulceration. It produces no inflammation if the surrounding parts are preserved, and the cure thus obtained is radical. —*Paris Médicale*, February, 1873.

Treatment of Cracked Nipple.—Of this condition there are two varieties: The one is the result of violent efforts at suction; the epidermis is elevated, cup-shaped, and is fissured; to avoid it the mother should not give suck until milk has accumulated in the breast. In the other variety, the milk deposits in the small clefts of the nipple in contact with the perspiration, and, decomposing, irritates and inflames the skin. The remedy consists in bathing the breast with lukewarm water, and afterward sponging it with the following: tannin, one gramme; glycerine, ten grammes.—*Lyon Médicale*, March, 1873.

Injections of Chloroform in Hydrocele.—Dr. Alfred Liegard communicates to the *Tribune Médicale* of March 30th a number of cases of hydrocele, radically cured by the injection of chloroform into the sac. After drawing off the serum, he injects about half an ounce of chloroform, allowing it to escape after remaining in the sac for two minutes. The pain and inflammatory reaction are less than after the injection of iodine, and the results are generally better.

Miscellany.

Appointments, Honors, etc.—Dr. W. M. McPheeters has retired from the chair of Materia Medica and Therapeutics of the Missouri Medical College. The vacancy has been filled by the selection of Dr. Edward Montgomery. Dr. J. T. Rothrock, of Wilkesbarre, has been appointed Assistant-Surgeon on an expedition which left Denver June 1st, to explore the Middle Park, Utah, and Southern California. Dr. C. A. White, Professor of Natural History in the Iowa University, has been offered the position of Geologist of the Yellowstone Expedition. The University of Nashville loses Profs. Bowling, Winston, and Lindsley. They are respectively succeeded by Profs. Madden, Nichol, and Callender. Mr. John Marshall, F. R. S., has been elected Professor of Anatomy to the Royal Academy, in succession to the late Prof. Partridge. Dr. Sharpey, the distinguished Professor of Physiology in University College, London, recently underwent, at the hands of Mr. Streatfeild, a successful operation for the extraction of a senile cataract from the left eye. Sir William Gull was recently waited upon by Dr. Conneau and Dr. Baron Corvisart, who presented him, on the part of the Empress Eugénie, with a costly gold box bearing the imperial cipher in diamonds. The box contained a pair of sleeve-links worn by the late emperor.

Prof. Owen has received from Her Majesty the Civil Companionship of the Bath. Sir Henry Holland has been elected President of the Royal Institution for the ensuing year. At a special meeting of the managers of the Royal Edinburgh Asylum for the Insane, Dr. Thomas S. Clouston, of the Cumberland and Westmoreland Asylum, was elected by eleven votes as successor to the late Dr. Skae. He was also selected to supply the place of Dr. Skae as Morisonian Lecturer for the current year. John Tyndall, LL. D., F. R. S., has been reelected Professor of Natural Philosophy in the Royal Institution of Great Britain.

Resolutions on the Death of Dr. J. C. Nott.—The following resolutions were presented by a committee of the New York Obstetrical Society, appointed at a meeting subsequent to the death of Dr. J. C. Nott:

Whereas, It has pleased Almighty God, in His infinite wisdom, to remove from our midst our late fellow and former President, Dr. Josiah C. Nott: therefore, be it

Resolved, That, while we bow in submission to His will, we feel that in the death of our late beloved associate we have sustained a loss rendered irreparable by his rare professional and scholastic acquirements, his genial and fascinating social qualities, and his simple, honest nature.

Resolved, That, by his valuable contributions to the profession which he loved and honored, Dr. Nott had rendered himself a member of whom we may all feel proud, and whose loss the science of medicine may well deplore.

Resolved, That, in his relations with and conduct toward his professional brethren, illustrated by a long and active career, he has left us an example worthy of imitation.

Resolved, That we tender to his bereaved family our most sincere and heart-felt sympathy in their sorrow.

Resolved, That a copy of these resolutions be sent to his family, and be published in the medical journals of this country.

(Signed)
J. Marion Sims, M. D.,
T. Gaillard Thomas, M. D.,
Thos. Addis Emmet, M. D.

Chas. S. Ward, M. D., *Secretary*.

Puerperal Diseases in Paris.—From M. Besnier's report on the medical constitution of Paris during January, February, and March, of the present year, it appears that puerperal affections underwent an exacerbation during the three months, which repeated observation has shown is normal for this period of the year. A most remarkable feature brought out is the vastly-diminished mortality which has ensued upon the adoption by the *Assistance Publique* of the plan of attending women at their own homes. During the three months there were 1,656 women delivered in the Paris hospitals, with a mortality of 4.04 per cent. There were 616 sent to be confined at the houses of midwives living in Paris, with a mortality of 1.29 per cent. Of 2,868 women delivered at their own homes by the midwives of the Bureaux de Bienfaisance, only 11 died—a mortality of 0.37 per cent. As this only corresponds with what has been observed in former returns, the *Assistance Publique* has naturally determined to restrain the delivery of women in hospitals within the narrowest possible limits, and even to restrict it at midwives' houses, while the system *à domicile* will be extended in proportion.

International Medical Congress.—The third meeting of this body will be held at Vienna from September 2 to 10, 1873. The Executive Committee consists of Profs. Rokitansky, Sigmund, Hebra, Benedikt, and Schutzler. The meetings are to be free to all members of the profession who forward their names. The committee has selected the following subjects, upon which reports will be presented for discussion: Vaccination; Quarantine and Cholera; Prostitution; Sanitation of Towns; International Pharmacopœia; Uniformity of Medical Education. Other subjects may be introduced, on notice to that effect being forwarded before May 1st. The language is to be German, but the use of other languages will be allowed during discussions, and translations of official addresses and documents will be given.

Uncivil Journals.—The *Western Lancet*, of San Francisco, shows its usual good taste in republishing our article (occupying twenty-one pages of that Journal) on "Rhus Venenata and Rhus Toxicodendron," by Dr. James C. White, with the remark that it is "peculiarly interesting" to practitioners on that coast. No remark is made, however, as to the source from which the article was taken. The February number of "the largest medical monthly in America" contained over fifty-nine pages of material taken from the New York Medical Journal, without the slightest acknowledgment—one paper contributed by Dr. Sims constituting nearly half that issue.

American Medical Association.—The following are the officers of this Association for the current year: President, Dr. J. M. Toner, District of Columbia; First Vice-President, W. Y. Gadbury, of Mississippi; Second Vice-President. J. M. Keller, of Kentucky; Third Vice-President, W. C. Husted, of Missouri; Fourth Vice-President, L. D. Warner, of Massachusetts; Treasurer, Dr. Caspar Wistar, of Philadelphia; Librarian, William Lee; Committee on Libraries, Johnson Elliott; Secretary, Theodore A. McGraw. Detroit is the place of next meeting, to be held on the first Tuesday in June, 1874.

Æ and Œ.—The *Obstetrical Journal of Great Britain and Ireland*, having found it necessary to come to some conclusion regarding the use of these diphthongs, has decided to discard them altogether, "believing them to be alien to the genius of the English language." They have already been abandoned in a great many words in which they were formerly thought proper, and we see little reason for retaining them in any.

The Illness of the Pope.—According to the *Lancet*, the illness of the Pope is a complicated one, consisting of cerebrospinal exhaustion, the result of a life-long liability to epileptoid seizures, varicose ulcer of the leg, subacute bronchitis and rheumatism, and threatened locomotor ataxy. Drs. Sartori and Viale-Prelà are unremitting in their attendance.

The Boston University.—A bill was before the Massachusetts Legislature, authorizing the union of the New England Female College with the Boston University, the latter to assume all the rights, privileges, franchise, property, etc., belonging to the former. We have not heard what action was taken upon it.

A Valuable Journal.—The *Obstetrical Journal of Great Britain and Ireland* bids fair to take an important position in medical literature. It is now republished in this country by Henry C. Lea, of Philadelphia, with a supplement of sixteen pages, edited by Dr. William F. Jenks.

Rigid Examinations.—Within the last ten months there have been four hundred and forty-three candidates for membership of the Royal College of Surgeons, England. Of this number one hundred and four have been rejected.

Treatment of Retention of Urine by Aspiration.—Dr. Dieulafoy (in *L'Abeille Médicale*) applies himself to answer the question, "Under what circumstances should aspiration be practised for retention?"

Formerly puncture of the bladder was a dangerous measure, resorted to as a last extremity, after repeated failures to pass any kind of catheter or sound, attempts which were usually followed by an aggravation of the local disorder in the urethra, while all the time the urine was steadily accumulating. Now, Dr. Dieulafoy thinks we have in the aspirator a substitute for abortive efforts at catheterization, for puncture of the bladder by the ordinary trocar, or perineal puncture. This method, he urges, affords no difficulty to even inexperienced hands, there is no danger, and no occasion to temporize.

He would tap the bladder thus, even in retention during prolonged labor, or in an individual suffering from enlarged prostate. Aspiration should, in short, be practised without delay in all cases where a methodical attempt at catheterism, once or twice repeated, had failed.

The point of puncture should be one or two centimetres above the pubes. A long needle, No. 1, with a calibre of two-thirds of a millimetre, is the best, and the operator should assure himself beforehand that it is clear and permeable. As soon as the needle has penetrated the tissues sufficiently to cover the openings in it, the tap should be turned so as to open the communication with the already exhausted syringe. The needle, therefore, will carry a vacuum along with it, and the exact moment it enters the bladder will be precisely determined by the immediate flow of urine into the syringe. This is evidently an important point. The operator then pushes the needle two centimetres farther in, to allow for the subsequent contraction of the bladder. A litre of urine may thus be evacuated in ten minutes. All pressure on the abdomen should be avoided. It is prejudicial and unnecessary, being liable to displace the needle. As soon as the bladder is emptied, the needle should be briskly drawn out. There are no after-precautions to take. Dr. Dieulafoy concludes by stating that the operation is painless, innocent, easy of execution, and certain in result, requiring no special surgical knowledge or ability, and within the reach of all. He compares it to the subcutaneous injection of morphia by the syringe of Pravaz.

The author anticipates from the future employment of this means the rare occurrence for the future of urinary infiltration, false passage, and other urethral accidents.—*London Medical Record.*

The Aspirator in Strangulated Hernia.—At a recent meeting of the Paris Société de Chirurgie, M. Demarquay read a report (founded on a case communicated by Dr. Bailly, of Chambly) "On the Aspiration of the Liquids and Gases contained within a Strangulated Hernia." M. Bailly was called at ten o'clock on the night of September 7th to a lady fifty-eight years of age, who had labored under a femoral hernia of the left side during the last forty years, and which had been strangulated since the morning. He remained two hours with the patient, and, having employed the taxis without success, resolved to operate the next morning. Accordingly, after additional attempts made under chloroform, the hernial sac was laid bare, and it was determined to try how far aspiration would facilitate its reduction. Pravaz's syringe was employed three times, but, as reduction was found still to be impossible, the sac was laid open and two new applications of the syringe were made to the intestine itself. The distention of the intestine having by this means been diminished, the taxis was again gently applied, and the intestine returned. The patient did well. M. Demarquay is of opinion that the procedure of which the above case is an example is well deserving of attention, and should be encouraged and recommended within certain limits. —*Medical Times and Gazette.*

Death from Chloroform.—On February 14th, a patient died under the influence of chloroform in Sir Patrick Dun's Hospital, Dublin, while undergoing amputation. The coroner's jury subsequently gave a verdict of "accidental death," and laid great stress on the necessity for thorough examination of patients before giving them chloroform.—*Lancet.*

Obituary.

David Skae, M. D., F. R. C. E., Medical Superintendent of the Morningside Lunatic Asylum, died April 18th. He was born in 1819. After taking his degree, he practised for some time in Edinburgh, and in 1847 was appointed the Superintendent of Morningside Asylum, which office he retained till his death. Dr. Skae was well known by the members of the profession in Edinburgh, and his name is familiar to a large class of medical men in all parts of the world. He was a man of remarkable ability and attainments.

Another victim to the duties and dangers of our profession has just been carried off. Dr. Marc Girard, of Bordeaux, a young surgeon of great distinction, who promised to reach the foremost rank among the profession in the south of France, has just died, at the early age of thirty-five, through a slight scratch of the finger while performing disarticulation of the shoulder on a patient presenting symptoms of putrid infection. He died after a few short days of illness, during which he was perfectly aware of the fatal character of his disease, and prepared for his sad end. At his funeral, which was attended by a large crowd, the Mayor of Bordeaux, M. Fourcaud, expressed the feelings of sympathy and condolence which the town of Bordeaux at large manifested on this occasion.—*Lancet*, May 10th.

The Italian journals mention the death of Prof. Corticelli, of Florence, after a long and painful illness. The deceased, who was a physician of great erudition and an able teacher, had successively distinghished himself as Professor of Physiology in the University of Vienna, Professor of Hygiene at the School of Pisa, and, lastly, Professor of Forensic Medicine at Florence. He was a member of the Municipal Council of this latter city, and at his funeral the municipal councils of Florence and Vienna, and the three universities to which he had belonged, were largely represented.

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Original Communications.

Art. I.—*Gastrotomy for Intestinal Occlusion.* By Samuel Whitall, M. D., New York.

It is not a little surprising, in view of the remarkable results of ovariotomy, that so many should be permitted to die of acute intestinal obstruction, when their lives might have been saved by an operation similar to, but far less formidable than, the one for the extirpation of ovarian cysts. Especially is this surprising when we consider that ovariotomy has completely answered, in the struggle through which it has passed, nearly every objection now urged against gastrotomy, and that to-day it is regarded as not only justifiable, but, in skilful hands, as one of the safest procedures in surgery.

Gastrotomy for intestinal occlusion has, however, a record of its own to show; and to ascertain what lessons it teaches is the object of this paper.

Some months ago I watched by the bedside of a medical friend whose life was slowly yielding to this terrible accident. I urged gastrotomy as the only means of saving him from certain death. The patient was himself fully aware of his condition, and asked if an operation might not give relief. For reasons which will be referred to in the history of the case, no operation was performed.

Whether gastrotomy be a justifiable operation, and whether it would have afforded any relief in the following case, are questions we can more properly answer after having considered the subject in all is bearings.

The case referred to, aside from its connection with the subject under discussion, is of unusual interest, showing a rare form of intestinal obstruction:

Case.—On Wednesday afternoon, December 18, 1872, I saw, in connection with Drs. MacGregor, Freeman, Studley, and other physicians, the late Dr. Tice, of this city. From Dr. MacGregor, the attending physician, the following facts in regard to the case were obtained:

Many years previously the patient had a severe attack, the prominent feature of which was obstinate vomiting. During the late war he had also typhoid fever. With these exceptions he had enjoyed uniformly good health.

On Friday of the preceding week the patient had occasion to go to Brooklyn to attend a case of labor, and reached home shortly after midnight, complaining of griping pains in the bowels. Before retiring he took some simple remedy, passed a restless night, and in the morning was no better. He however attended to his professional duties, and in the afternoon again visited his patient in Brooklyn. Upon his first visit he partook very liberally of honey, with the comb, and on the second he ate heartily of sausages. During the whole of this time the tormina continued gradually increasing in severity. He returned home in the evening in great distress, took large and frequent doses of tincture of opium during the night, without relief, and on Sunday morning for the first time he vomited. During Saturday night the pain was insufferable, causing the doctor to scream out in his agony. He stated that the sensation was as though the bowels were "knotted." The pain and vomiting continued nearly all Sunday with little abatement, but toward evening, after repeated doses of opium, there was a marked amelioration, and he was enabled to pass a comfortable night. His relief was unhappily of short duration; about 10 P. M., Monday, the vomiting returned with great violence and frequency, and was markedly stercoraceous. Previous to this there was nothing peculiar in the ejected material. From this time until death, the pain was far less distressing than the nausea. The vomiting continued more or less during Tuesday. In the afternoon of the latter day he was seen by a prominent physician, who recognized nothing in his condition to warrant an unfavorable prognosis. He considered the trouble due to intestinal irritation, and, after recommending a continuation of the opium, he left, with the full assurance to the patient that there was not the slightest danger.

At 4 o'clock, Wednesday afternoon, I saw the patient for the first time. He was lying in bed on his right side, with the lower limbs drawn up, while his countenance plainly indicated the character and intensity of his suffering. His face was pale, though somewhat livid, his eyes sunken, dull, and suffused, his features contorted. The extremities were warm and dry; the pulse about 100, and quite full; axillary temperature 97⅘° Fahr. The urine normal in color, quantity, reaction, and specific gravity, and contained no albumen; not examined microscopically. Bowels constipated. Symptoms, as above narrated, still continued; the tormina were located by the patient around the umbilicus; the abdomen was slightly tympanitic, and could be manipulated without causing much distress. There was tenderness in one spot only, of small size, about an inch to the left of the umbilicus. Whenever this point was touched pain was complained of, and there was also a decided sense of resistance, if not of tumefaction. Percussion over this part yielded slightly-diminished resonance. It was evident, from the history, that the case was one of great gravity. The persistence of the nausea and vomiting, and the stercoraceous character of the latter, the absence of natural stools, and the marked condition of collapse which was shown by the patient's appearance and measured by the thermometer, all pointed too surely to a fatal intestinal obstruction.

In the evening, the condition of the patient remaining unchanged, the operation of gastrotomy was discussed. One of our most prominent surgeons, whose advice was sought upon this special point, while recognizing fully the gravity and probable fatality of the case, considered an operation "out of the question," for the following reasons: the obscurity of the case, the danger of an operation, the improbability of relief being thus afforded, and the possibility of a spontaneous removal of the obstruction. It was, therefore, concluded by almost all present to abandon the sufferer to his fate, except to mitigate as much as possible his distress by opiates.

From Wednesday night until early the following Sunday the symptoms remained in general unchanged; the vomiting continued with greater or less severity, ceasing for a while and then returning with great violence. The vomited material was generally of a bilious character, once or twice of a dirty-brown color and exceedingly offensive, and a few times it was of a grass-green color. The pulse remained about 100, and the temperature, with one or two exceptions, about one degree below normal, but a short time before death it went up to a fraction over 100° Fahr.

During the whole of this time the suffering was very great; though generally free from pain, the patient frequently remarked that the epigastric oppression and nausea, and the feeling of utter prostration, were "terrible." Hiccough was a frequent and distressing symptom; the desire for ice constant until shortly before death. For the last few days of his life, there was universal and distressing hyperæsthesia, which was especially severe over the abdomen, but this portion of the body was more susceptible to superficial manipulation than to deep pressure. There was at no time excessive tympanitis. The abdominal muscles were generally in a state of tonic contraction, the tender spot previously complained of disappeared, and, if one part was more sensitive than another, it was in a corresponding situation on the right side.

The vital powers steadily but very gradually yielded, every inch of the ground being contested by a constitution too strong to lightly let go its hold on life. Early Sunday morning a marked change for the worse occurred. The extremities for the first time grew cold and clammy; the pulse grew rapidly feeble, and was soon imperceptible; vomiting was replaced by distressing retching; the breathing became frequent and labored; the face was darkly livid, except the tip of the nose, which was white; the patient was most of the time lethargic, and death was momentarily expected. Suddenly, however, the vital powers would rally, the pulse would return and the patient throw himself, almost unconsciously, and with unnatural strength, from one position to another, at the same time shrieking from his anguish, and pleading for relief. In a moment he would again relapse into lethargy. This scene was repeated, at longer and shorter intervals, until Monday afternoon, at four o'clock, when he ceased to breathe—ten days from the date of attack. Consciousness was not notably clouded; when aroused he would recognize the individual addressing him.

Autopsy five hours after death. *Rigor mortis* strongly marked, body somewhat emaciated. The abdominal cavity only examined. The small intestines intensely congested throughout their whole extent, and moderately distended. There was, however, no evidence of obstruction. The large intestine presented a striking contrast; it was nearly empty, not much congested, and greatly reduced in calibre. Upon superficial examination no traces of obstruction could be seen. The caput coli was, however, less movable than usual, in consequence of chronic adhesions which bound it, but not very firmly, to subjacent parts. It was also somewhat puckered by bands of false membrane.

It being evident that no other portion of the intestinal canal was the seat of the disease which proved so rapidly fatal, the caput was removed, with portions of the colon and ileum, for a careful examination. The other abdominal organs were healthy in gross appearance. No evidence of recent peritonitis. Omentum healthy, mesentery exceedingly fatty, mesenteric glands enlarged and of a reddish color, appendices epiploicæ numerous and large, Peyer's patches quite prominent.

Upon a careful dissection of the portion removed, the appendix vermiformis was found embedded in false membrane; it was considerably larger than normal, and communicated with the caput by an unusually large opening, and contained a dirty-brown diffluent material, in which were some grape-seeds, which had been swallowed by the patient probably two weeks before death. The calibre of the caput was reduced perhaps one-half; the mucous membrane was thickened, congested, and thrown into rigid folds, and the walls considerably hypertrophied. The ileo-cæcal valves presented a remarkable appearance; both folds were intensely congested, greatly thickened, and nodular. The colic fold contained a mass which appeared to have its origin in the submucous connective tissue; it was of quite firm consistence, the size of a large chestnut, and resembled in appearance a recent hæmorrhoid. The cæcal fold was similarly involved, but to a less extent. The ileo-cæcal orifice was not materially reduced in size. Numerous grape-seeds were found in the caput and in the ileum, with a fluid similar to that found in the appendix.

Here, then, was a solution of the difficulty. The colic fold of the valve had blocked up the orifice, while the rigid condition of the caput, together with the reduction in size of its cavity, had prevented the displacement of the tumors sufficiently to permit the onward passage of the intestinal contents.

The exact nature of these growths must, unfortunately, remain a matter of conjecture. Wishing to keep the parts as much intact as possible, to exhibit the specimen to the Pathological Society, I had purposely deferred a microscopic examination, and, when I came to look for the preparation, I found, to my great regret, that the individual in whose charge I left it had, through mistake, disposed of it.

It is worthy of note that the patient at no time complained of either pain or tenderness on the right iliac fossa; on the contrary, the tender and slightly-tumefied spot to the left of the umbilicus, and the rapidity with which emesis followed the introduction of any thing into the stomach, rendered it probable that the obstruction was in the upper portion of the small intestine.

While the *post-mortem* examination satisfied those who witnessed it that operative interference would probably have been without benefit, I am now, with new light upon the subject, compelled to believe, and shall endeavor to show, that such a course would not only have been justifiable, but that it might have saved the life of the patient. I shall endeavor further to show that gastrotomy, modified according to circumstances, is the operation which should be performed in every case of acute intestinal obstruction (due regard being paid to well-recognized contraindications) within twenty-four or forty-eight hours of the invasion of symptoms.

In order to bring this important matter fully and clearly before the reader, I shall consider the subject under the follow-lowing heads:

1. A brief history of the opinions held by different authors who have written upon gastrotomy.

2. An account of all the operations the writer has been able to collect.

3. A glance at the results of gastrotomy for other affections, and at the effects of injuries to the peritonæum.

4. Replies to objections urged against gastrotomy for the relief of internal strangulation.

5. The different methods of operating, and the objects to be accomplished by each.

6. A consideration of the question whether gastrotomy be a justifiable operation, and, if so, whether it would have afforded any relief in the case of Dr. Tice.

1. The idea of opening the abdominal cavity for the relief of internal strangulation is by no means a recent one, either in theory or practice, but so tenaciously has the profession clung to the impression that exposure of a serous membrane to the open air must almost inevitably prove fatal, that only now and then has one been found bold enough to venture upon the operation. This impression has, however, lost much of its force, and must soon entirely disappear, as rapidly-accumulating facts show it to be a delusion.

From a recent thesis by Dr. Delaporte, of Paris ("De la Gastrotomie, dans les Étranglements internes," 1872), we will quote briefly some interesting facts relative to the history of gastrotomy, and especially of the progress of opinion upon the subject in France. Delaporte takes much of his information from an unpublished paper by M. Boinet.

Cœlius Aurelianus reports that, three hundred and fifty years B. C., Praxagoras approved of the operation in cases of *iliac passion*. Haller, M. A. Severin, Mercurial, Hévin, Van Swieten, and others, think he referred to herniotomy; but Hoffman, Berchusen, and Le Clerc, believed he advised true gastrotomy. In 1672, Paul Barbette, of Amsterdam, proposed it very clearly in intussusception, as follows: "Is it not certainly better, having made a section of the muscles and the peritonæum, to seize and draw out the intestines with the fingers, than to commit the patient to certain death." Fred. Hoffman and Felix Plater believed the operation very practicable, though they had never performed it, provided it were done early, and there was not extensive inflammation. Van Swieten and Otton, however, condemned it, on account of the uncertainty of the cause of the disease. Hévin, in a paper read before the Royal Academy of Surgery, of Paris, in 1768, urged, without avail, the operation, and was compelled, in his published memoir, to express the opinion of the Academy, and to completely discountenance such procedure. In 1836, however, a posthumous paper of the same author was published by M. Dezeimeris, in which gastrotomy is recommended in desperate cases. Hévin found in his researches but two cases of gastrotomy, one reported by Bonet, on the authority of Rev. M. Pinault, who lived in intimate connection with the patient, and the other advised by Nück, and reported by Velse. Boinet states that the members of the Royal Academy of Surgery "disapproved without restriction, and rejected absolutely," the operation, because of the uncertainty of diagnosis, and because early in the disease milder remedies might prove successful, while later the patient would be too exhausted, or the bowel would be gangrenous. To these objections they added the difficulties of the operation itself, and concluded that "it would be better to abandon the patients to Providence, as hopeless, rather than to injure the art and the reputation of the practitioner." Cheselden was in the habit of opening the abdomen for strangulated bubonocele and to release from within the incarcerated intestine. Morand remarks that Cheselden revived this method, which was a common practice in the time of Rosset, and that Pigray describes very clearly this practice, which appears to have succeeded ordinarily very well. Blancard believed delay in operating was the cause of many failures. Schacherus would not disapprove of the operation in intussusception, provided one were certain of the diagnosis. Breschet and Finot, in the present century (1816) remark in regard to objections: "But these objections appear to us more specious than solid; we have reached a time when the science of surgery, enlightened by the torch of anatomy and the progress of human sciences, should no longer permit itself to be arrested by the timid prejudices which have for so long a time hindered its flight. Confided to skilful hands, this operation offers no more danger than those which are daily undertaken upon different parts of the body, and it presents as many chances of success as any of them. One ought not, then, if occasion present, to hesitate to perform gastrotomy as the only means of safety that art is able to offer in certain circumstances." Maunoury (Thesis, 1819) advocates an early operation. Fuchsius, who operated successfully in 1825, believed gastrotomy less formidable and less fatal than most authorities thought. Masson (Thesis, 1826) indorsed Boyer and Dupuytren, who were opposed to the operation. Bonnet (Thesis, 1830) strongly advocated it. Testu (Thesis, 1830) states that it is generally accorded that one should not resort to the operation. Renaud (Thesis, 1833) limits himself to the remark that gastrotomy is not more grave than hysterotomy. Durand (Thesis, 1835), after referring to Murat's approval of the operation, concludes his own approval thus: "Above all, it is the extreme facility of discovering and releasing the intestine, as I have had occasion many times to remark upon the cadaver, which has suggested to me the idea of writing upon a subject worthy the efforts of a more learned pen." Ducros favored gastrotomy, notwithstanding the failure in Briquet's case. Largeau (Thesis, 1840), after remarking upon the plausibility of the objections to the operation, says, in conclusion: "Nevertheless, ought one, for such reasons, to banish it forever from the domain of surgery? Should not one rather be permitted to put into practice the axiom, *Melius anceps remedium quam nullum?*" Velpeau's opinion is thus quoted in the "Compendium de Médecine": "If it should chance that one had almost a complete certainty of the existence, either of a recent invagination, or of a strangulation, and that the situation of the disease was well determined, one should, I think, risk the operation of gastrotomy." The authors of the "Compendium" indorse this opinion. Dr. Pfeiffer considered gastrotomy neither difficult nor grave. In 1852, the Academy of Medicine, notwithstanding Bouvier's efforts, failed to commit itself to a definite opinion upon the subject. Vassor (Thesis, 1852) is of opinion that "laparotomy" should be proscribed, and enterotomy performed in all cases. Rieux (Thesis, 1853) concludes that gastrotomy should be accepted in surgery; to be terminated by enterotomy should it fail to relieve the obstruction. Nélaton ("Surgical Pathology," vol. iv.) says of gastrotomy: "The most serious objections have been made to this operation. It is, indeed, very difficult to determine the point or seat of the strangulation, and one can frequently only remove it at the expense of manœuvres which singularly predispose to peritonitis. We think, then, that in cases of this nature it is better to have recourse immediately to the establishment of an artificial anus—to enterotomy." Savopoulo (Thesis, 1854) rejects gastrotomy and proposes enterotomy, as extolled by his master Nélaton. Duchaussoy, in a memoir to which was awarded the prize of the Academy of Medicine, in 1860, passes in review the different forms of strangulation, and discusses the indications and contraindications to an operation in each form, and whether the operation should be gastrotomy or enterotomy. He is in favor of each operation, adapting the method to the nature of the strangulation. Boutet-Duriveaux (1857) thinks the operation justly abandoned. Bayon (1858) advocates gastrotomy in certain cases. Mony (1860) declares himself boldly for Nélaton's operation. Trousseau (1865) advocates gastrotomy in preference to enterotomy, except in cases where the intestine is gangrenous, or contracted by lesions of its tissues. Larguier (Thesis, 1870) is of opinion that a parallel cannot be drawn between two operations so different in their consequences and so distinct in their application as gastrotomy and enterotomy. "The choice," he adds, "between gastrotomy and enterotomy, being subordinate to the indications of the malady, it is not a matter of indifference to employ the one or the other of these methods." Charpentier (Thesis, 1870) fully agrees with Larguier. Delaporte, in closing his historical sketch, remarks: "To-day the latest authors who have occupied themselves with the study of internal strangulation pronounce themselves very clearly in favor of the operation of gastrotomy in cases in which it is applicable."

I will add to these a few quotations, showing the opinions of more recent English and American authors upon this important subject:

Crisp, in an article hereafter quoted more largely, remarks: "From a careful investigation of a number of recorded cases of intestinal obstructions, I have come to the conclusion that the operation of gastrotomy, if early performed, and if a proper discrimination be made in the selection of the cases, is likely to be attended, in many instances, with a favorable result."

Phillips ("Observations on Intestinal Obstructions," Medico-Chirurgical Transactions, vol. xxxi., 1848) records his opinion of operative interference as follows: "Our experience of operations upon the abdominal cavity, for the relief of obstructions, is now, I think, sufficiently large to justify us, from the results, in adopting some rule of conduct, and the fact of the great probability of loss of life under ordinary treatment, the comparatively successful results of operations upon the abdominal cavity in modern surgery, and our experience of surgical interference in cases of obstruction, may, though in opposition to some of the foregoing opinions, seem to warrant a recourse to gastrotomy, when the diagnosis is sufficiently clear." He concludes that "the interference by surgical operation is justifiable, when three or four days have passed without any relief from ordinary means, provided the constipation be complete, and vomiting of fecal matter continue, because it affords a greater chance for the preservation of life than ordinary means; that, if the indications as to the seat of the obstruction be sufficient to satisfy the surgeon, it is at or near that point that the incision should be made, but, if there be much doubt, it is most prudent to make the incision on the median line; that, if it be found impracticable to remove the cause of the obstruction, or imprudent to make any extended search for it, relief may be obtained by forming an artificial anus as near as may be prudent to the seat of obstruction; and that, if it be, as it frequently is, near the termination of the ileum, an incision on the median line admits of its accomplishment, as near as may be, to the termination of that intestine." He is, however, more in favor of enterotomy than gastrotomy, and claims that an artificial anus has saved more than the division of bands, or removal of intussusception, and that "it is to this point our attention must be most earnestly directed."

Hilton, in his remarks upon the operation which he performed for strangulated obturator hernia, concludes that, though both his operations were unsuccessful, he is strongly impressed with the propriety of making such attempts.

Erichsen ("Surgery," American edition, 1869, p. 996), after admitting the difficulties in the solution of the question, and believing that the operation is probably nearly as fatal as the disease for which it is undertaken, remarks: "If, however, by attention to any of the points that have been pretty fully adverted to, it can be satisfactorily made out that there is an internal strangulation, and more especially if the intumescence occasioned by it can be felt, it would evidently be the duty of the surgeon to give the patient his only chance, by the division of the stricture. With regard to the time at which this should be done, the only general rule that can be laid down is probably the conclusion arrived at by Mr. Phillips."

Watson ("Practice of Physic," American edition, vol. ii., p. 524, 1872): "I should express much the same thoughts concerning that more daring exploit of surgery which proposes to lay open and explore the cavity of the abdomen in the living subject, and to disentangle or set free the intestine strangulated somehow within. This procedure differs materially from the former" (colotomy), "inasmuch as it contemplates no compromise between certain death and complete recovery. It is fearful to be called upon for counsel in seemingly desperate emergencies, respecting these scarcely less desperate remedies. Our doubts and indecision, however, as in almost all questions of conduct, are the doubts and indecision of ignorance: ignorance in the earlier periods, when the operation might be more hopefully attempted, whether the obstacle be really insuperable by other means; ignorance whether, if so insuperable, it may be vincible by the help of the operation: ignorance, in short, as to its exact nature and place. These are predicaments in which the patient must be admitted to the consultation; and if the peril were my own, and all other prospect of relief had failed me, I would submit myself to to this forlorn hope of rescue."

Aitken (American edition, vol. ii., p. 864): "When all remedies fail, gastrotomy may be thought of, and its chances of success considered. The operation is advocated by Benjamin Phillips, and in some cases it may be justifiable."

Pollock (Holmes's "Surgery," vol. iv., p. 635), although opposed to gastrotomy in intussusception, advocates it in other forms of obstruction. "The operation of opening the abdomen through the peritonæum," he continues, "is requisite for the relief of internal strangulations of the small intestine, or obstructions caused by foreign bodies or calculi, or supposed strictures of the small intestine. That of opening the colon in the lumbar region can only be useful when obstruction occurs in the large bowel."

Rokitansky ("Pathological Anatomy," Sydenham edition, vol. ii., p. 54) says of internal strangulation: "This affection, when diagnosed, most imperatively requires an operative proceeding for the purpose of disentangling and arranging the intestines, and for division of the strangulating structures, with or without the knife."

Niemeyer (American edition, vol. i., p. 571): "Rotations and internal strangulations can rarely be diagnosticated with sufficient certainty to justify gastrotomy, which, to be successful, should be performed as early as possible. . . . Where the intussusception has been recognized early, we may perform gastrotomy, as has been successfully done in some cases."

Trousseau (*Clinique Médicale*, American edition, vol. iv., p. 205): "Gentlemen, I admit that, when we see surgeons (to search for and detach an ovary) making large openings into the abdomen, with morbidly-thickened walls and the seat of great morbid changes, without taking into account the temporary contact of air with the peritonæum, and the horrible mutilations necessary for attaining the object desired, there need not be any alarm at the proposal to make a large incision into the *linea alba*, so as to enable the hand to be introduced into the abdomen, there to seek for and destroy the obstacle, or to drag forward the particular intestinal convolution in which it is desirable to form an artificial anus. It appears to me, therefore, that the undeniable success which has attended ovariotomy would justify, for the cure of internal strangulation, recourse being had to an operation which, though perhaps more calculated to excite alarm, is surer, more rational, and less dangerous than ovariotomy."

Tanner (fifth American edition, p. 690): "If, by a careful and searching examination, we come to the conclusion that the obstruction is in the small intestine, and is caused by a diverticulum, or by a constricting band of organized lymph around the bowel, it is the duty of the practitioner to perform gastrotomy. On the contrary, in the case of intramural obstructions, of intussusception, of stricture from the contraction of cicatrices, of obstruction complicated with enteritis, or peritonitis, of obstruction from cancer of the small intestine, in neither of these instances has any operation the least chance of success."

Flint ("Practice of Medicine," p. 403) refers to gastrotomy only in cases of intussusception, and concludes in the following language: "In short, at the time when the operation, if employed at all, would be advisable, the chances of recovery after it would be less than if reliance were placed on spontaneous cure. Even with a view to artificial anus, the operation would be likely to lessen the chances of spontaneous cure. The propriety of surgical interference has, therefore, justly not many advocates."

Spencer Wells ("London Pathological Society Reports," vol. xiv., p. 170) remarked upon a case of unsuccessful operation (hereafter given) for intussusception, that the fact of the possibility of withdrawing an involuted portion of intestine being thus established, it might be hoped that the operation would be successful if performed early enough.

Annandale (*Edin. Medical Journal*, vol. xi., 1871): "Operations for this purpose have frequently been practised with a fair amount of success, and I venture to think that if my operation had been performed a little earlier, and my patient had been a more suitable subject for operative interference, the chances of a permanent cure would have been very good, for the obstruction was one of the most favorable for removal in this way."

C. Hilton Fagge ("Guy's Hospital Reports," Series III., vol. xiv., 1868): "There are indeed those who would boldly cut down on an intussusception or a volvulus in the hope of being able to pull out the one, or untwist the other. In either instance there may be something to be said for operative interference; but no such strong arguments can be used in its favor as would exist in any case in which the presence of a constricting band

should have been certainly determined." Of internal strangulations by bands, etc., he remarks: "I regard the facts derivable from our *post-mortem* records, then, as indicating no insuperable obstacle to the success of an exploratory operation, in the great majority of cases of true internal strangulations which are to found in these records." "From the tenor of the above remarks it will be inferred that I entertain a strong hope that the exploratory operation will hereafter be admitted as a legitimate procedure, and will be successfully practised in carefully-selected but, no doubt, exceptional cases, of internal strangulation of the intestine."

In regard to the operation upon children, there is also a difference of opinion:

Spencer Wells (*op. cit.*) indirectly supports it in his remarks upon his fatal case which occurred in a child aged four months.

John Gorham ("Guy's Hospital Reports," vol. iii., p. 330), in an article upon intussusception as it occurs in infants, remarks with regard to gastrotomy: "I certainly should not be inclined to operate in infants, at all events, for it is more than probable that convulsions would destroy them, even ere the operation was finished."

Dr. Stephen Rogers, in an elaborate paper upon "intussusception," chiefly as it occurs in children, read before the New York State Medical Society, in 1872, discusses briefly the question of gastrotomy. He states that Rilliet and Barthez very positively declare that, if other means have been thoroughly but unsuccessfully employed for three or four days, they should not hesitate to resort to laparotomy; that Meigs and Pepper agree with these authors; that Dr. Brinton opposes it, on the ground that it is more dangerous than the risk that the obstruction will not be removed by the sloughing and passage of the invaginated portion; that Dr. J. Lewis Smith also opposes it, on the ground that "the child, and especially the infant, could hardly recover from the shock of so severe an operation, even if it escaped peritoneal inflammation." Dr. Rogers strongly approves of surgical interference; he remarks: "In conclusion, I feel justified in stating that whether the obstruction occurs in the infant, the older child, or in the adult; whether it be produced by intussusception, by volvulus, or by the constriction of a fibrous band, the failure of fluid enemata and inflation, after a fair and thorough trial, should be followed by laparotomy. If the obstruction prove to be from constriction by a fibrous band, or volvulus of the small intestine, it is the only means of offering the slightest hope."

From these numerous citations it will be seen that the profession is by no means united upon the question of gastrotomy. Some writers are entirely opposed to it; some prefer one method of operating and some another; some consider it admissible only in very exceptional cases, while others (perhaps the majority) strongly advocate it, after the ineffectual use of ordinary means, provided always that there be no contraindication. The objections which have been urged, with greater or less weight, against this operation, at different times, have been classified under six heads, and ably answered by Dr. Edwards Crisp, in a paper on intestinal obstructions, read before the Physical Society of Guy's Hospital, March 6, 1847. —(*Lancet*, vol. i., 1847.)

2. Before considering these objections, it will be proper to ascertain what have been the results of gastrotomy, and to consider what conditions have tended, on the one hand, to a favorable issue, and what, on the other, have prevented it. By so doing I shall be better able to answer those who think doubtfully of the operation, or openly oppose it. When Crisp wrote his paper, gastrotomy for intestinal obstruction had been performed much less frequently than at present, though the number of cases is still too limited to admit of positive conclusions upon many points. The operation has, however, been performed sufficiently often to enable us to judge somewhat of its merits, and to decide whether, in future, it shall be encouraged or meet with unqualified condemnation.

In order to avoid all dispute as to the nature of the obstruction, or the method of operating, and to enable us to judge more correctly of the merits of each case, I give the following abstract of all the operations I have been able to collect, each record being made as clear yet brief as possible.

In this as in other instances I have availed myself of the labors of Delaporte, from whose thesis I take nineteen of the following cases. This author gives the histories of twenty cases; but, as one of them is clearly a case of herniotomy (though the operator began with the intention of performing gastrotomy), we reject it. The description of the operation is briefly as follows: The patient was suffering from strangulated inguinal hernia of the right side, which had been reduced *en masse*. The incision involved the skin, the subcutaneous cellular tissue, the muscles, and the fascia transversalis; the tumor was then easily drawn out and its peritoneal envelope opened. It was found to be a real hernial sac, the neck of which, like a firm fibrous cord, had grasped the intestine so tightly that it was with difficulty that a probe-pointed bistoury could be introduced to divide the constriction.—(Delaporte's case 17, operation by Lorquet.)

I have been able to collect in all thirty cases, nineteen from Delaporte, the balance scattered through American, English, and German journals. With more time to search, I am satisfied this number could be materially increased.

I am indebted to Drs. S. S. Purple, T. T. Sabine, and A. Jacobi, for access to journals without which I could not have collected the present number of cases. I am also indebted to Dr. J. F. Hagar, assistant-physician of the Colored Home, for much aid in the preparation of this article.

Three of the cases were operated on in this country; they were all negroes, and all recovered. They are given in full from the original records, two of which were in journals long ago discontinued, but which I found in the valuable library of Dr. Purple. Delaporte gives abstracts of two of these cases.

CASE I. Reported by BONET. (*Sepulchretum Anatomicum*, lib. iii., sec. 14, p. 228. *De Dolore Iliaco. Genève*, 1677–'79.)—The most illustrious Baroness of Lanti being in a deplorable condition from *iliac passion*, a young surgeon of the army presented himself, and offered certain recovery if the noble patient would only submit to have her abdomen opened. This being conceded, he operated, and, having drawn out and unrolled a large portion of intestine, the contortion finally appeared; he seized upon this, unfolded it, and, after he had loosened the knots, restored it to its position. He then sewed up the external wound, which united with the happiest success, and restored the noble patient to perfect health. She settled an annuity upon her preserver, the use of which he was permitted to enjoy for only three years, as the lady survived him.

CASE II. Reported by VELSE. (*De Mortuo Intestinorum Ingressu.*

Lugd. Bat., 1782.)—Female, aged fifty years. Nück, supposing the malady to depend upon intussusception, proposed the following operation: That the abdominal cavity should be opened in the left side by an incision, extending four finger-breadths from the umbilicus obliquely downward and backward; that the intestine should then be drawn out, quickly bathed with tepid milk, the seat of the obstruction sought for, and the intestine slowly disengaged, after which the wound could be closed by suture. His advice being followed, an intussusception was immediately found, without inflammation or adhesions, and was without difficulty disengaged. The patient survived the operation more than twenty years.

CASE III. Reported by BLANCARD. (*Prax. Med.*, t. ii., caput ii., p. 50.)—Female, aged twenty-eight years. The inutility of other means, and the danger of death from mortification, caused the physicians to decide upon making an incision into the lower portion of the abdominal cavity. This was done three finger-breadths above the hernial tumor; the surgeon then, with his fingers greased with oil, made the intestine return which formed the hernia, at the same time, with the other hand, he pushed it up from without as much as possible, because the opening into the peritonæum was very small. The patient made a rapid recovery.

CASE IV. Operation by DUPUYTREN; reported by MAUNOURY. *Thèses de Paris*, 1819.)—Male, aged fifty-seven years. Admitted to Hôtel-Dieu, in service of Récamier, who, with Dupuytren, regarded the existence of internal strangulation as clearly demonstrated as could be. Operation decided. An incision was made in the median line, extending from the umbilicus about three and a half inches downward. As the intestines did not protrude from the wound as they anticipated, they judged that they were bound to the abdominal walls by adhesions. The index-finger of the operator was introduced between the intestines and the posterior wall of the abdomen, near the cæcum, when a pouch was discovered, formed by recent adhesions; upon breaking these up, there escaped from the wound considerable flocculent liquid, similar to that produced by inflamed serous membranes. A second pouch was opened, near the internal abdominal ring, from which there flowed a similar fluid. The condition of the patient being "truly deplorable," further search was abandoned, and the wound dressed in such manner as to allow free exit to the pus. The patient died the night following the operation.

Autopsy.—Intestines bound to each other and to the parietes by false membrane, purulent foci here and there, pelvic cavity full of purulent serum, rectum bathed in pus and detached in its whole circumference, small intestine red and distended, large intestine contracted. Ileum found constricted by adherent omentum, near upper border of pelvis.

CASE V. (FUCHSIUS. *Jour. pratischen Heilkunde*, *Février*, 1825.)—Male, aged twenty-eight years. Sudden and violent pain in the right side, a little below the umbilicus, vomiting, obstinate constipation, tumor at seat of greatest pain, no distention. An incision was made at the painful point, and the hand of the operator, anointed with oil, was introduced into the abdominal cavity, and the tumefied portion drawn out, when an invagination was recognized. Not being able to reach the point where the intussusception commenced, Fuchsius made an opening into the canal where it terminated, and disengaged all the invaginated portion, consisting of two feet of intestine. Both wounds united with sutures. Complete recovery in fourteen days.

CASE VI. (B. C. BRODIE. *Lancet*, vol. xii., 1827.)—Female, middle-aged. Admitted to St. George's Hospital, April 21st, about twenty-four hours after invasion of symptoms of intestinal strangulation. At this time not less than two yards of small intestine, with a corresponding portion of the mesentery, was seen protruding from the anus. These were found, upon examination, to have escaped through a slit in the anterior portion of the rectum, about two inches above the anus. All efforts at reduction having failed, "Mr. Brodie made a longitudinal incision in the linea alba, about two inches in length, below the umbilicus. The incision was continued through the peritonæum into the cavity of the abdomen, and the fingers being introduced at this, by gently pulling the small intestine, that portion which had protruded through the slit in the rectum was readily drawn back into the abdomen." The wound was then closed by sutures. After the operation the pulse was scarcely perceptible and the extremities cold; vomiting also continued. Death a few hours later, on the evening of the 23d. Autopsy revealed extensive peritonitis, "many parts covered with a layer of coagulated lymph." The slit in the rectum showed no signs of ulceration, whence it was concluded that the opening was the result of accidental laceration.

CASE VII. (Operation by JNO. R. WILSON, M. D. Reported by Mr. W. W. THOMPSON, Student of Medicine. *Transylvania Journal of Medicine* for October, November, and December, 1835, p. 486.)—This operation, novel, I believe, in the annals of surgery, was performed by my friend and preceptor John R. Wilson, M. D., then of Rutherford County, Tennessee, now of Mississippi, between the 25th and 30th of December, 1831, and with complete success. The following report of the case is given from memory, but is substantially correct. It is presumed that Dr. Wilson will, at some future day, furnish the profession with a more circumstantial report, which cannot fail to attract considerable attention. The subject of the operation was a negro man, aged about twenty years, the property of Mr. Charles Dement. The patient had labored for seventeen days under bilious colic, and stercoraceous vomiting and the other more alarming symptoms of this disease had appeared. All the active purgatives were administered in vain, and, on the evening before the operation was resolved upon, as a *dernier ressort*, some ounces of crude mercury were given. The constipation remaining, with the other formidable appearances, it was plain that nothing but the knife could save the patient. The operation was performed in the following manner: "An incision was made along the linea alba, commencing above the umbilicus, and extending two or three inches below it, being in all about five inches in extent. The bowels being protruded through the wound, that portion involved in the stricture came into view. It was found to be the ileum. The bowel was grasped above and below the point of obstruction, and, after several efforts of considerable force, the adhesions gave way. The exertions necessary to break up the attachments, it was feared, might lacerate the intestine, but no such accident followed. The bowel strangulated was of a dark, livid appearance, evidently approaching to gangrene, and of double its ordinary size. The vessels of the omentum were also deeply engorged with black blood, apparently stagnant. The parts seemed to be on the verge of mortification. After returning the intestines into the abdomen, having carefully excluded the atmosphere during the operation by a warm, moist cloth spread over the viscera, the wound was made secure by a few stitches with the needle and adhesive strips. The patient was put to bed, and in a very short time voided the mercury which he took the evening before. His recovery was rapid and entire."

Case VIII. Reybard (de Lyon). (*Bulletin de l'Acad. de Méd.*, t. ix., p. 1031, 1843–'44.)—Male, aged twenty-eight; had suffered many years, especially for six months preceding the operation. Reybard, considering the trouble due to carcinomatous tumor of the sigmoid flexure, which, if left to itself, would prove fatal, decided to operate. An incision was made six inches in length, one inch above the crest of the ileum and parallel with it, beginning at the anterior superior spine. The tissues were divided layer after layer, and the vessels ligated as soon as cut. The peritonæum was then cautiously opened to the extent of about three inches. The tumor, although with much difficulty, was drawn out, and two ligatures, embracing a sufficiently large extent of the meso-colon, were applied to prevent hæmorrhage. He removed the intestine (about three inches) with a bistoury, and the meso-colon with scissors. The ligatures around the intestinal arteries were left long and introduced into the canal, after which the two ends of the bowel united by sutures. Having replaced the parts deeply in the abdomen, the external wound was closed. Ten days after, the sutures were removed, and the patient had an abundant stool following an enema. Twenty-eight days after, natural functions restored. Death in a little less than a year, from a return of the disease.

Case IX. Monod. Reported by Ducros. (*Arch. Gén. de Méd.*, t. ii., p. 455, 3e série, 1838.)—Female, aged twenty-five. Pain more or less in bowels from infancy, worse two months before admission into Hôpital Cochin, May 8, 1838. A hard, firm, immovable, deeply-seated tumor, felt in ileo-cæcal region. Exasperation of symptoms from May 23d to June 5th, when Monod was called in by Briquet, and decided to perform gastrotomy. An incision was made, about three inches in length, in the right inferior portion of the abdomen, obliquely upward and outward. Upon opening the peritonea cavity, serum escaped, and a mass of large intestine protruded from the wound. This was pushed back, and the index-finger, carried deeply into the cavity, recognized an indurated mass behind and above the cæcum. Monod then drew out another portion of intestine, which proved to be the small, and which was red, tumefied, and not remarkably sensitive. This was opened longitudinally about an inch and a half, and immediately a considerable quantity of fecal matter escaped, to the great relief of the patient. The opened intestine was secured in the wound by passing through the mesentery a thread, which was fastened outside by strips of adhesive plaster. Soon after, the intestine slipped back into the abdominal cavity, but was without difficulty regained. The patient sank and died on the 7th.

Autopsy.—Peritonitis; scirrhous mass constricting cæcum at junction with colon, so that a female sound could scarcely pass.

CASE X. KRUG. (*Schmidt's Jahrbücher der Gesammten de Medicin*, vol. xl., p. 214. Med. Annalen, Bd. viii., Hft. 3.)—Male, aged thirty-six. This was a very remarkable case of invagination, the symptoms of which recurred at intervals for six months previous to the operation. Sausage-shaped masses were felt in different situations in the abdomen, especially in left hypogastrium; blood and pus at different times by stool. Finally, when the patient was nearly dead, with a portion of gangrenous intestine protruding from the anus, laparotomy was decided upon at his own request, not with the intention of unfolding the invagination, which must already have relieved itself by sloughing, but for the purpose of saving his life by establishing an artificial anus. An incision was made above Poupart's ligament and four inches to the left of the median line, three inches long, running from below upward and outward. After cutting through the muscles and carefully opening the peritonæum, there spouted out about a pint of clear, yellowish, odorless fluid; peritonæum opaque and thickened. Upon enlarging the wound and introducing the finger, a strong, hard, sausage-shaped swelling was instantly struck, and everywhere were felt hardened knuckles of intestine. The adhesions were so numerous that, after fruitless efforts to get further into the abdominal cavity, and after the intestine had been ruptured at an undiscovered point, the operation was abandoned. The wound was closed except at lower part, where a tent was left in. Death from exhaustion nine days after. The autopsy revealed a very unusual and complicated series of invaginations which we have not space to describe.

CASE XI. J. E. MANLOVE. (*Boston Medical and Surgical Journal*, vols. xxxii. and xxxiii., 1845.)—On the 7th of July, 1844, was called to see Alfred, a colored boy, aged seventeen years. He complained of some general uneasiness of the abdomen, and was laboring under some febrile excitement; pulse 110. Learned that he did not recollect having a passage from the bowels in twelve or fifteen days. On the 4th had walked some miles to a barbecue, and probably had indulged freely in eating. He had taken Epsom salts and castor-oil; also several enemata had been administered by his master. I bled him "*ad deliquium animi*," gave him a general warm bath, and ordered four grains of calomel and half a grain of opium every four hours until three portions should be taken, to be followed by castor-oil and spirits of turpentine. *8th.*—Medicine had all been taken;

no evacuation; had vomited once, throwing up the medicine. Pulse 120. Bled him; administered a stimulating enema, and directed calomel and opium as on previous day. Called again in the afternoon; condition the same, no evacuation. Spent the night with him. Vomited several times during the night. Pulse 120, and feeble; abdomen tympanitic. *9th.*—Dr. Ford was called in consultation. Condition remained the same, except that the symptoms were becoming more and more alarming. Flexible tubes introduced and stimulating articles thrown up so as to literally fill the lower bowel. These were thrown off without any appearance of fæces. About sixty grains of tartrate of antimony were introduced, in two injections, dissolved in water, with little or no influence on general system. An emetic also of ipecac. was given, emesis being readily produced, but no alteration in the symptoms. *10th.*—Abdomen enormously distended; difficulty of breathing; extremities cold; pulse very feeble and quick; countenance anxious; no evacuations. Gastrotomy was considered necessary; and, although it promised but little benefit, yet we determined to undertake its performance. An incision was made in the median line, commencing about two inches below the umbilicus, and extending down toward the pubes four or five inches. The peritonæum and bowel, along the lower half of the incision, had formed a most intricate adhesion, and in cutting through the former an opening of about a quarter of an inch was made in the latter. From the opening there proceeded large quantities of flatus and fæces, as well as the oil and turpentine that had been taken. On further examination it was discovered that the intestines were united to peritonæum by external adhesions, at various points within reach of finger and probe. The wound was closed by sutures and adhesive straps, except the opening into the intestine. The amendment in all the symptoms in one hour was astonishing; the extremities became warm, pulse slower and fuller, and during the morning he was able to fan himself, the weather being excessively warm. On the next day his appetite was good, and he continued to improve and discharge the contents of the bowels through the artificial anus until the seventeenth day after the operation, when the bowels acted naturally, the wound having nearly closed. It will be proper to state that, about six months before his present illness, the boy received an injury by the falling of a piece of lumber on the abdomen. The hurt caused him to keep his bed several weeks, and hence, no doubt, the adhesions which were discovered in the operation. The boy is now well (nine months after the operation).

CASE XII. Operation by HILTON. Reported by GOLDING BIRD. (*Med.-Chir. Trans.*, vol. xiii., 1847.)—Male, aged twenty-two. Fifteen days after commencement of trouble, Drs. Bird and Hilton decided to operate. An incision was made in the median line from umbilicus to symphysis and the peritonæum opened. Intestines protruded to such an extent that the incision was extended an inch above the umbilicus. Many adhesions. After a minute search, the cause of the obstruction was found in the right side. It consisted of about seven inches of small intestine, which had been strangulated in an opening formed in part by another fold of small intestine, and by chronic adhesions with the pelvic bones near the external iliac vessels. The intestine disengaged by gentle traction. Operation lasted an hour. Wound closed by sutures. Death from collapse within nine hours. On autopsy many adhesions were found between the intestinal folds. The cæcum and colon were filled with fæces, proving that the passage had become reëstablished.

CASE XIII. HILTON. (*Medico-Chirurgical Transactions*, xxxi., 1848, p. 323.)—Female, aged thirty-six years, feeble and delicate. Had suffered more or less, for four months previous to the operation, with constipation and occasional vomiting. Marked aggravation for eleven days, at which time Hilton saw her, and decided that the obstruction was in the small intestine, in consequence of the early vomiting, the scanty secretion of urine, and the ease with which the large intestine would retain three pints of fluid. Gastrotomy proposed, accepted, and performed as follows: An incision was made in the median line, from umbilicus to pubes, and upon opening the peritonæum the intestines were found already covered with false membrane. He introduced his hand, but could find nothing. He then extended the incision about an inch above and to the left of the umbilicus, and finally found a strangulated hernia in the left obturator foramen, which he reduced by gentle traction and external pressure. Intestine discolored, but not gangrenous. Wound closed by sutures. The symptoms did not abate; the peritonitis continued, and the patient died during the night. Autopsy revealed extensive peritonitis; intestinal circulation had, however, become restored. No other obstruction discovered.

CASE XIV. REALI. (*Bulletino delle Scienze Mediche*, October, November, and December, 1851.)—An Italian peasant, thinking to economize in the quantity of his food, blocked up the rectum with a piece of stick five inches long, one inch in diameter at base, and tapering to a rounded extremity. Reali, who saw the patient at the hospital of Orvieto, failing to remove the body by the anus, performed gastrotomy in the left side. He then endeavored to push the stick, which he distinctly felt in the descending colon, downward, so as to be reached per anum. Failing in this, he incised the gut and withdrew the fragment, after which the wounds in the intestine and abdominal wall were closed. No accumulation of feces above the obstruction, simply dark-colored mucus; peritonæum in this region injected; intestinal walls thickened. Following the operation there were meteorism and vomiting, in consequence of the tumefaction of the intestinal wall, which yielded to *three bleedings, the application of leeches, and some doses of Croton-oil!* Evacuations restored the fifth day, wound healed by the fortieth. Recovery complete.

CASE XV. DRUITT. Reported by THOMAS PEREGRINE. (*Medico-Chirurgical Transactions*, vol. xxxi., 1848, p. 247.)—Male, aged eleven years. Had a similar attack two months previously. On the fourteenth day, the patient still suffering from symptoms of obstruction, gastrotomy was performed as follows: "I made an incision about two and a half inches in length over the linea alba, between the umbilicus and pubes, and cut carefully down to the peritonæum. This being opened, and found not to be adhering to the bowels, we passed in our fingers to the spot indicated by the patient, and, after separating a few slight and loose adhesions, and one tolerably broad and firm adhesion of adjoining folds, we came to a distinct band, passing tightly over a portion of the intestines. Having therefore enlarged the wound upward and downward to the extent of about four inches, we proceeded cautiously to draw the constricting substance into view, when we found it to be a band, smooth, having a glistening peritoneal envelope, dense in its texture, and appearing to be either an unnatural appendage or else a very old adhesion. It was about three-quarters of an inch long, of the size of a common piece of red tape, and passed from one fold of intestine to another, binding down a certain portion of the intestine under it. Having satisfied ourselves as to its nature, and passed a finger under it, we divided it." A stream of feculent matter now poured forth from the lower portion of the peritoneal cavity, which, after a "long and difficult search," was found to proceed from a perforating ulcer. The opening was secured by needle and ligature, the intestines returned, and the external wound closed by sutures. Death in two hours and a half. Extensive adhesions were found on *post-mortem* examination.

Case XVI. Luke. Reported by Phillips. (*Medico-Chirurgical Transactions*, xxxi., 1848.)—Male, aged forty-one years. Had suffered only nine days previous to admission to hospital. Luke, being satisfied that the obstruction existed at the extremity of the colon, resolved to make an exploratory incision, which was done six days after the admission of the patient. An incision, four inches long, was made in left iliac fossa; the distention of the intestines was so great that it was necessary to enlarge the wound; notwithstanding this, he could only reach the obstruction by evacuating the gas with a small trocar. The intestine was then opened to the extent of an inch and a half, and, upon introducing the finger, a constriction, which appeared to be a circular induration, was felt. The patient was not relieved, and died in twenty-four hours. The autopsy revealed a stricture of the sigmoid flexure, occupying about five inches of the intestine, eight inches from the anus. It was perfectly impenetrable, and the result of chronic thickening.

Case XVII. Luke. (*London Pathological Society's Transactions*, vol. ii., p. 218.)—Male, aged fifty years. Admitted London Hospital, February 16, 1850. Had suffered for twenty years with left inguinal hernia. As no tumor could be felt, Luke supposed it had returned *en masse*, and made an exploratory incision "by laying open the inguinal canal, and opening the abdomen at the upper and outer part of the inner ring. No hernial protrusion could be detected, and the small intestine which made its appearance at the opening was not distended, nor did it appear much inflamed. The index-finger was inserted into the cavity, and no tumor was found, nor any other cause of obstruction." Died unrelieved four days after operation. On *post mortem*, a stricture was found twelve inches from the external sphincter, admitting only an ordinary-sized probe.

CASE XVIII. HILTON. (*Association Medical Journal*, May 12, 1854.)—A young man of Norwood, under care of Dr. Ridge. Hilton called in August 11, 1853, and performed gastrotomy. Patient prostrated, surroundings miserable. An incision was made in median line, about three inches in length, commencing a little below and to the left of the umbilicus, and extending downward. Upon opening the peritonæum the transverse colon and great omentum were brought into view, and were found greatly congested. Some miliary tubercles and chronic adhesions seen. The obstruction was caused by an abnormal opening in the mesentery, through which a portion of small intestine had passed and become strangulated. Disengaged without difficulty. Symptoms of obstruction disappeared, and, for a while, patient felt better, but the following evening became very much prostrated and died. No autopsy.

CASE XIX. THOMAS WOOD. (*Western Lancet*, Cincinnati, vol. xiv., p. 720, 1853.)—On Thursday, the 10th instant (December), I was called, in company with my friend Dr. J. P. Walker, to see Miller, a colored man, fifty-five years of age, who had been troubled with a scrotal hernia of the left side for a number of years. He had, three days previous to our visit, come to the city on a steamboat, on which he had been employed. He gave the following history of his case: He was in the habit of wearing a truss, but one week before we saw him the bowel had passed by the truss into the scrotum, and, on attempting to return it, he experienced considerable pain and difficulty in accomplishing his object. After a time, however, he succeeded in returning the hernia into the abdomen. No motion of the bowels had occurred since the accident, although he had taken large doses of the most drastic purgatives, and had repeatedly had the rectum injected with cathartic enemas. He had suffered with severe pain in the umbilical region, and had vomited up all that he had swallowed, both solid and fluid, during the past week. We found him with a feeble pulse, sunken and anxious countenance, with a cold perspiration on the surface; and at intervals of half an hour he was vomiting stercoraceous matter, at the same time complaining of a "twisting" pain at the navel. By a minute and careful examination of the abdominal rings, both external and internal, no obstruction or hernial tumor could be found in them. The abdominal muscles were relaxed and soft, and the bowels not at all distended, as he had for several days emptied them by the mouth. The finger could readily be passed from the bottom of the scrotum through the external ring, inguinal canal, and internal ring of the left side, and no obstruction could be detected. Although he had no pain nor tenderness on the left iliac region, he said he felt conscious that the difficulty was in that point; and, on pressing the muscles down on the left ileo-pectineal line, a small movable tumor was faintly discoverable, which could be pushed inward as far as the proximity of the sacrum, or carried upward by the fingers above Poupart's ligament. In consultation, it was our opinion that this tumor was either an invagination or the portion of the bowel that had been returned, perhaps twisted on itself and strangulated by bands of adhesive lymph. The man was evidently in a hopeless condition unless he could be relieved by an operation, and it was therefore decided on to make an exploratory operation through the abdominal muscles, and, if possible, find and remove the difficulty. But at this time the operation was postponed, from the patient refusing to submit to it. He was left in charge of Dr. Walker, who tried the effect of tobacco-injections and other means, during the night, without any benefit. On Friday, about twelve o'clock, I was again called to see the patient, and found him much prostrated. His pulse was quite feeble and his extremities cold and covered with a clammy sweat, while the vomiting of stercor was still more frequent. At this time he consented to have the operation performed. The incision was made by commencing at the outer margin of the left rectus muscle, and running upward and outward parallel with Poupart's ligament, and about two inches from it, extending the wound about four inches in that direction. When the peritoneal cavity was opened, and the omentum raised from the bottom of the wound, the difficulty was soon discovered. A part of the sigmoid flexure of the colon was strangulated in the sac, which had been returned with the bowel, through the internal ring. The sac contained about three inches of the bowel, which had become closely adhered to its inner surface and strangulated by its mouth. After dividing the stricture on a directory with a bistoury, the adhesions were broken up with my finger, and the bowel and sac (that had been drawn out through the wound while dividing the stricture) were replaced as "nigh" in their natural position as possible. The wound was then closed by stitches and adhesive strips, and a compress was placed over all and retained by a bandage around the pelvis. That night the patient's bowels were moved twice. His wound healed by direct union, and his recovery was not retarded by any unfavorable symptoms arising from the operation. On the fifth day after the operation he was sitting up to take his breakfast, feeling quite well.

Case XX. Borelli. (*Gazetta Medica Italiana—Stati Sardi*, 1854.)—Male, forty, a robust countryman, had suffered from infancy with left inguinal hernia. Eight days after invasion of symptoms, Borelli, in the absence of evidence of strangulated hernia, suspected internal obstruction, and decided to operate. A transverse incision was made in the left iliac fossa, at a height of about three inches, dividing successively the skin, the muscles, and the peritonæum. The small intestines which protruded were unfolded without finding the shadow of a strangulation. Introducing the hand almost entirely in the abdominal cavity, he detected the seat of the strangulation by the side of the umbilicus. It consisted of a very hard and contracted ring. The obstruction was removed with a Pott's bistoury, which the operator had with him, and without which he states he could not have terminated the operation. Time of operation twenty minutes; wound closed by sutures. The patient recovered.

Case XXI. Pagenstecher. (*Arch. für klin. Chir.* Langenbeck. Band ii., 1861.)—Female, aged seventy, had been under Dr. Pagenstecher's care for several years for a catarrhal affection. Thorax and abdomen examined from time to time, without discovering any abnormality. Had not seen her for a year previous to July, 1858. One day, while carrying a heavy basket, she felt something "crack" in the abdomen; this was followed by great pain in right side, which was relieved by pressure. For the first time she felt a tumor in painful region. Vomiting almost immedidiately, first contents of stomach, then bile, by noon next day stercoraceous. No movement of bowels for four days; suppression of urine since attack. The day following the attack, Dr. Pagenstecher found a tumor just above Poupart's ligament, and behind the enlarged inguinal canal of the right side, through which it could also be felt. Great pain in tumor on manipulation; abdomen excessively tympanitic but painless. The tumor rapidly increased in size, the symptoms increased in severity, and the patient became much exhausted. The condition pointing to internal strangulation, an operation was decided upon, and performed the night following the accident. An incision three inches in length was made, beginning at the symphysis pubis and extending outward and upward, just above Poupart's ligament and parallel with it. The external crus of the abdominal ring and the inferior oblique muscle were divided, and the inguinal canal laid open. The peritonæum protruded and was readily opened, upon which a moderate amount of turbid serum escaped. What was supposed to be a hernial sac was then brought into view; it was of a brown-blue color, with large, turgescent veins running over it. The mass could be encircled by the finger, but no strangulated intestine could be felt. Higher up on the anterior surface of the tumor, coils of small intestine were felt compressed between the tumor and abdominal walls, and secured by adhesions. The adhesions were broken up and the intestine released. The tumor could then be traced higher and higher, till it finally seemed to terminate in the fissure of the gall-bladder. Believed it to be *hydrops cystidis*. Having satisfied himself that the intestines were free, the gall-bladder was secured in the wound and punctured, giving exit to a large quantity of turbid, fatty fluid, rich in cholesterine. Wound left partially open. Symptoms of obstruction disappeared in a few hours, and in three weeks the patient was perfectly well. The wound discharged pus for a few days, and then healed up. Three years after, the patient still living.

CASE XXII. DEPAUL. Reported by MONY. (*Thèses de Paris*, 1869.) —A young man entered Hôtel-Dieu, October 20, 1859, in the service of Grisolle, suffering from the symptoms of internal strangulation, the cause of which was unknown.

On the 27th, the pateint being unrelieved, M. Depaul operated. An opening was made vertically, commencing about two inches to the left of and below the umbilicus, and prolonged toward the pubes about four inches. Commencing peritonitis. Depaul, by digital examination, believing the adhesions which were felt to bind down the intestines to the left half of the base of the sacrum were too thick and too extensive to be destroyed, decided to establish an artificial anus. Death six hours after. The autopsy revealed the fact that the constriction had not been extensive, but that it was undoubtedly caused by a band. Before death, however, the intestine had disengaged itself; the furrow left by the band being the only trace of obstruction. Recent peritonitis.

CASE XXIII. TESSIER. (*Boston Medical and Surgical Journal*, vol. lxiii., p. 292, 1860, from the *British American Journal*, June, 1860.)—A young female, after suffering six days from symptoms of intestinal strangulation, without relief, accepted an operation as the only alternative. A tumor being felt on the left side a little below the umbilicus, it was thought to be a volvulus of the sigmoid flexure. An incision was made from the umbilicus to a point about an inch from the pubes, in the median line. A gush of serum ensued which was followed by coils of thickened, distended, and discolored intestine curling so much over the wound as to interfere with a proper examination. The incision was then extended to a point about two and a half inches above the umbilicus, while the intestines were supported by assistants. The flexure of the colon was found so convoluted that the direction of the twist could hardly be recognized. During the examination a softened patch above the constriction gave way and some of the contents of the intestine escaped. The opening was secured by ligature. An adventitious band which constricted the bowel was divided, and the obstruction relieved. Another rupture occurred causing escape of fecal matter into peritoneal cavity. After cleaning out the latter the wound was closed by sutures. Death followed in two hours.

CASE XXIV. WALTER COULSON, Esq. (*London Lancet*, vol. ii., p. 303, 1863.)—Female, aged sixty, mother of nine children. The patient suffered from the symptoms of obstruction for sixteen days previous to the operation. There were complete constipation, pain, and stercoraceous vomiting; marked exhaustion. No hernial tumor discovered. An exploratory incision was decided upon and made in the median line, starting one inch below the umbilicus and extending downward three inches. The opening into the peritonæum was at first only sufficient to admit the finger, but was subsequently enlarged. The distended small intestines were then brought into view, and followed along for some distance, without discovering the obstruction. The hand was then carried downward toward the cæcum, when a portion of empty intestine was encountered, and, by tracing this up, the seat of strangulation was reached in the left obturator foramen. After some difficulty, about two inches of the ileum (a good deal congested) were withdrawn by continued and cautious traction. The intestines were then replaced, and the wound closed by six sutures. Operation November 29th at 5 P. M.; death from exhaustion November 30th, 2.20 A. M. Before death the bowels had acted twice copiously. The exhaustion was attributed, in part, to the rapid discharge of the contents of the intestines, and in part to over-exertion in consequence of nurse's endeavor to make a chamber-utensil answer the purpose of a bed-pan.

CASE XXV. FERGUSSON. (*Medical Times and Gazette*, p. 435, October 25, 1862.)—Male, aged twelve. Had suffered for six days with symptoms of internal obstruction, without relief from ordinary remedies, under the care of Dr. Johnson. Mr. Fergusson decided to perform gastrotomy, which was done as follows: The boy having been put under the influence of chloroform, and the bladder emptied by catheter, an incision was made in the median line of the abdomen, commencing three inches above the umbilicus and ending about three and a half inches below it. Some serous fluid escaped and the small intestine protruded; its surface was red and granular, and some flakes of lymph adhered to it here and there. It was found necessary to puncture the intestine with a trocar to evacuate the contents (yellow, ill-smelling fluid) before the seat of the obstruction could be determined. A coil of intestine was found in the left iliac region, excessively dark and congested. At first it appeared that a band encircled the bowel, but, on turning the bowel around, it was discovered that the mesentery and intestine had been twisted round so as to constrict the bowel and obstruct the circulation. The twist was readily undone and the bowel then appeared to be free. A diverticulum about two inches long went off from the bowel where it was most congested, but did not appear to have been concerned in causing the obstruction. The intestine in the neighborhood of the obstruction was gangrenous, and so soft that it broke down under the fingers, and two ligatures had to be placed on it. The intestines were again punctured to relieve the distention, were replaced, and the wound closed. Operation at 2.15 P. M.; death at 6.20 P. M. same evening. The autopsy revealed tubercular peritonitis, strumous enlargement of mesenteric glands, and chronic adhesions.

CASE XXVI. SPENCER WELLS. (*Transactions London Pathological Society*, vol. xiv., p. 170.)—Child, aged four months. Mr. Wells called in by Mr. Joy, under whose care the patient was. Involuted portion of the intestine felt *per rectum*. Four days after the commencement of the symptoms, the child being in an almost dying state, gastrotomy was performed and thus described: "Mr. Wells opened the abdomen on the median line just below the umbilicus, by an incision two inches long. The obstructed portion of intestine was at once felt and easily withdrawn; but it was so tightly jammed into the colon and rectum, or rather the cæcum and ascending and transverse colon were so closely involved by the descending colon that they were only separated with great difficulty. Still the reduction was accomplished, and the wound closed. The intestines above the seat of obstruction being greatly distended by flatus, a few needle-punctures were made in them before they were replaced. The child continued to sink, and died five hours after the operation. Mr. Wells added that the fact of the possibility of withdrawing an involved portion of intestine being thus established, it might be hoped that the operation would be successful if performed early enough."

CASE XXVII. BRYANT. (*Transactions Royal Society, Physiology and Surgery*, January to June, 1867.)—Male, aged fifty-one. Had suffered many days with symptoms of strangulation. A reducible, right inguinal hernia was excluded as a cause. An exploratory incision was made on a level with the hernia, but nothing found in this region to account for the symptoms. Nevertheless, the intestine which presented was of a deep-red color, œdematous, and clearly pointed to a strangulation. The intestines having been drawn down, the operator introduced his finger, and, following the intestine toward the point which was the seat of pain (to the right of the umbilicus), he felt a band which he was able to stretch with his finger and divide with the scissors. The patient rapidly recovered.

CASE XXVIII. PARISE, 1867. Reported by PATOIR. (*Thèses de Paris*, 1869.)—Male, aged thirty. After having suffered eight days, he was seen by Parise (in the beginning of 1867), who diagnosticated strangulation in the lower portion of the small intestine, and resolved to perform gastrotomy. He decided to make the opening upon the right side, because his investigations had convinced him that in this situation strangulations most frequently occurred. The incision was therefore made two inches above the femoral arch, about three inches in length, running upward and outward parallel with Poupart's ligament. Some fluid escaped on opening the peritonæum. The incision being too small to ascertain the exact nature of what, to the touch, appeared to be an indurated band, it was enlarged sufficiently to permit an inspection of the parts. The strangulation was caused by a diverticulum which grasped the intestine in a circular manner, while a band was attached to the ampullary extremity of the diverticulum, and from this point passed obliquely upward and to the left. This band was divided. The appendix was gangrenous for about one-third of its length, and from it escaped both gas and fecal material. It was opened and emptied, and secured to the edges of the wound. Death from peritonitis two days after operation. On autopsy, extensive peritonitis was found. The diverticulum was attached to the ileum about twelve inches from caput coli.

CASE XXIX. GERSON. Reported by O. PILZ. (*Jahrbuch für Kinderheilkunde*, 1869.)—Male infant, twelve weeks old. Suffering from intussusception. The invagination was readily found (method of operating not described), but, in endeavoring to relieve it, it ruptured at a gangrenous point, and the child died in a few hours.

CASE XXX. ANNANDALE, 1870. (*Edinburgh Medical Journal*, vol. xi., 1871.)—Male, aged fifty-five. Dissipated for many years. After an illness of four days, the prominent symptoms of which were intense pain in the abdomen, and fecal vomiting, accompanied with great prostration, Dr. Annandale proposed gastrotomy, to which the patient assented. The patient was so much exhausted in the evening when the operation was performed that it was decided to operate in the room he occupied, notwithstanding it was dark, dirty, and inconvenient, rather than to transfer him to the Royal Infirmary, as was at first proposed. "I made an incision," says Dr. Annandale, "extending from about an inch below the umbilicus to about two inches above the pubes, divided the abdominal walls down to the peritonæum, twisted one small artery which spouted at the lower end of the wound, and then carefully cut through the peritonæum to an extent corresponding to about two-thirds of the incision through the walls

No. of cases.	Date of operation.	Name of operator.	Age.	Sex.	By whom collected.	Nature of strangulation.	Days between invasion & operation.	Operation.	Result.		Condition at time of operation.	
									Recovery.	Death.	Of patient	Of abdominal cavity.
1	1679	Bonet............	?	F.	Delaporte	Volvulus..................	?	Gastrotomy	1	..	"Deplorable" ...	Not stated.
2	1742	By advice of Nück	50	F.	"	Intussusception..........	?	"	1	..	Not stated........	Good.
3	?	Rep. by Blancard.	28	F.	"	By hernia................	?	"	1	..	" "	Not stated.
4	1817	Dupuytren[2]......	57	M.	"	By omentum.............	6	"	..	1	"Trulydeplorable"	Extensive peritonitis.
5	1825	Fuchsius.........	18	M.	"	Intussusception..........	6	Gastro-enterotomy.	1	..	Not stated.......	Not stated.
6	1827	Brodie...........	?	F.	Whitall ..	By slit in rectum........	2	Gastrotomy.........	..	1	Collapsed........	Peritonitis.
7	1831	Wilson...........	20	M.	Delaporte	Intussusception..........	17	"	1	..	Not stated.......	Slight adhesions.
8	1833	Reybard	28	M.	"	Cancerous stricture of sigmoid flexure..........	?	Gastro-enterotomy.	1	..	" "	Not stated.
9	1838	Monod...........	25	F.	"	Scirrhous stric. of cæcum.	10	"	..	1	Prostration.......	Extensive peritonitis.
10	1842	Krug[2]............	36	M.	Whitall ..	Intussusception..........	?	Gastrotomy.........	..	1	Very bad.........	Peritonitis, rupture of intes.
11	1844	Manlove	17	M.	Delaporte	?	12	Gastro-enterotomy.	1	..	Great exhaustion.	Extensive adhesions.
12	1847	Hilton............	22	M.	"	By fold of intestine.......	..	Gastrotomy.........	..	1	Not stated.......	Numerous adhesions.
13	1847	Hilton............	36	F.	"	Obturator hernia.........	11	"	..	1	Feeble & delicate	Extensive peritonitis.
14	1848	Reali.............	?	M.	"	Foreign body in descending colon..............	9	Gastro-enterotomy.	1	..	Not stated.......	Not stated.
15	1848	Druitt[3]	11	M.	Whitall...	By band..................	14	Gastrotomy.........	..	1	Greatly exhaust'd	Perforation of intestine.
16	1848	Luke[4]............	41	M.	Delaporte	Stric. of sigmoid flexure.	9	Gastro-enterotomy.	..	1	Not stated.......	Not stated.
17[1]	1850	Luke[2]............	50	M.	Whitall...	"	?	Gastrotomy.........	..	1	" "	Obstruction not found.
18	1853	Hilton[5]...........	?	M.	Delaporte	By opening in mesentery	?	"	..	1	Collapsed.........	Miliary tubercles.
19	1853	Wood.............	55	M.	Whitall ..	By neck of hernial sac....	8	"	1	..	"	Old adhesions.
20	1854	Borelli...........	40	M.	Delaporte	By hard ring.............	8	"	1	..	Good	No peritonitis.
21	1858	Pagenstecher	70	F.	Whitall...	By dropsy of gall-bladder.	1½	"	1	..	"	Adhesions.
22	1859	Depaul...........	?	M.	Delaporte	By fibrous cord...........	7	Gastro-enterotomy.	..	1	Not stated.......	Commencing peritonitis.
23	1860	Tessier[3]..........	?	F.	Whitall...	By band..................	6	Gastrotomy.........	..	1	" "	Perforation and peritonitis.
24	1861	Coulson..........	60	F,	"	Obturator hernia.........	16	"	..	1	Exhausted.......	Not stated.
25	1862	Fergusson[3]	12	M.	"	Volvulus	6	"	..	1	Unfavorable......	Tubercular peritonitis, gangrene, rupture.
26	1863	Spencer Wells....	4m's .	?	"	Intussusception..........	4	"	..	1	"Almost dying".	Not stated.
27	1867	Bryant	51	M.	Delaporte	By band..................	many	"	1	..	Not stated.......	" "
28	1867	Parise[4]	30	M.	"	"	8	Gastro-enterotomy.	..	1	Very feeble......	Gangrene, peritonitis.
29	1869	Gerson[3]..........	12w's	M.	Whitall...	Intussusception..........	?	Gastrotomy.........	..	1	Not stated.......	Gangrene perforation.
30	1870	Annandale.......	55	M.	Delaporte	By band..................	3	"	..	1	Great prostration	No peritonitis.

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[1] The 17th case of Delaporte, being herniotomy, is rejected. [2] Abandoned operations. [3] In these cases there was perforation of the intestine; for which reason I shall classify them as "Gastro-enterotomy" in the table showing the comparative results of the different operations. I let them stand, however, in the above table as cases of gastrotomy, for there was really no *cutting* of the bowel. The result, however, could not be as favorable as if the bowel remained uninjured, as in operations of pure gastrotomy. [4] Incorrectly reported by Delaporte as gastrotomy. [5] Delaporte reports this case as having recovered.

of the abdomen. When the peritoneal cavity was opened a large mass of the small intestine protruded, and it was at once noticed that, while one portion of this intestine was much dilated, another portion was not only much contracted but congested in appearance." At the junction of these two portions the cause of the constriction was found. It consisted of a fine cord or band of lymph which passed entirely around the gut, tightly compressing its whole circumference. The band was soft and was very easily torn from its attachment, and the obstruction removed. No trace of peritonitis. Death from exhaustion at 1 P. M. the following day. The autopsy revealed nothing more than is above stated.

The table (p. 143), a modification of Delaporte's, shows at a glance many points of interest in the above cases.

The condition of the patient in some of these cases was quite favorable; in many others it was so unfavorable that a fatal termination, with or without an operation, was almost inevitable; while, in three instances, the operation was abandoned without the operator having removed, or even discovered, the cause of the occlusion. As it would, therefore, place the subject in a false light to view these cases only as a whole, I have formed the following table, showing the nature of the obstruction, the character and result of each operation, and the conditions under which it was performed:

Operation.	Conditions.	Nature of Obstruction.	Result.			
			Cases.	Recovery.	Deaths.	Per cent. of Recovery.
Gastrotomy.	Favorable Conditions.....	Volvulus..............................	1	1	—	100
		Intussusception..............................	1	1	—	100
		Strangulation by bands, diverticula, etc......	4	4	—	100
		Total..............................	6	6	—	100
	Unfavorable Conditions.....	Intussusception..............................	2	1	1	50
		Strangulation by bands, etc..............	7	1	6	14$\frac{2}{7}$
		Total..............................	9	2	7	22$\frac{2}{9}$
Gastro-Enterotomy.	Favorable Conditions.....	Intussusception..............................	1	1	—	100
		Stricture from cancer..............................	1	1	—	100
		Foreign body in colon..............................	1	1	—	100
		Total..............................	3	3	—	100
	Unfavorable Conditions.....	Volvulus..............................	1	—	1	—
		Intussusception..............................	1	—	1	—
		Strangulation by bands, etc..............	4	—	4	—
		Stricture from cancer, etc..............	2	—	2	—
		Unknown..............................	1	1	—	100
		Total..............................	9	1	8	11$\frac{1}{9}$
Number of operations under favorable conditions..............			9	9	—	100
Number of operations under unfavorable conditions..............			18	3	15	16$\frac{2}{3}$
Total number of completed operations..............			27	12	15	44$\frac{4}{9}$
Operations begun, but abandoned, one each for intussusception, stricture, and strangulation by omentum..............			3	—	3	—
Grand total..............................			30	12	18	40

Any one, sufficiently interested, can satisfy himself of the correctness of this table by comparing it with the abstract of cases given. I will simply remark that I have placed under the class of favorable conditions all those cases in which the patient was not greatly exhausted, and in which there existed no serious abdominal obstacle, as extensive peritonitis, gangrene, perforation, insuperable occlusion. All others come under one of the other divisions. Whenever I have been in doubt, I have considered the conditions favorable, that the test may be as severe as any one could desire.

We thus find that, when the conditions were as favorable for an operation as one could reasonably expect in a disease of such great fatality, *one hundred per cent. were saved; whereas, without such interference, every one of these must unquestionably have died.* Allowing, however, each case to weigh equally in the balance, we have a percentage of recovery fully three times as great as that which occurs without surgical interference, as shall be shown hereafter. A study of these tables must, furthermore, lead to the conviction that a considerable number of the cases classed under "unfavorable conditions" would have come under the better class had the operation been performed earlier. We find, also, in two out of the three abandoned operations, conditions which might have been avoided by timely surgical interference.

In Dupuytren's case, for example, there existed extensive purulent peritonitis (probably from some undiscovered perforation); and in Krug's case, had an operation been performed in one of the earlier attacks (when the disease was mistaken for enteritis), the extensive adhesions, the gangrene, and the perforation, might have been prevented. In the third case (Luke's) we have a convincing argument in favor of a large abdominal incision. Had such an incision been made in the median line, the seat of the obstruction would have been discovered, and, although the occlusion could not have been relieved, the establishment of an artificial anus in the sigmoid flexure (a procedure readily accomplished) would undoubtedly have prolonged the patient's life.

The above percentage of recoveries compares unfavorably with the conclusions arrived at by Delaporte, who states that in gastrotomy it was fifty-seven per cent., in gastro-enterotomy sixty-six, and, in the two combined, sixty. The difference is easily explained: Delaporte reports one case as having recovered that in reality died; and, in addition to this, the eleven cases which I collected were nearly all desperate ones and terminated fatally.[1] Notwithstanding this more unfavorable exhibit, the above statistics, in the judgment of the writer, require no special pleading in their favor, and they are submitted without further comment.

3. Before I attempt to answer the objections urged against this operation, it will be pertinent and of special interest to notice briefly the results of abdominal section for other affections; and the effect of severe injuries to the peritonæum, as corroborative evidence in favor of gastrotomy for the relief of internal obstruction.

Dr. Peaslee, in his able and classical work upon ovariotomy, states that, "at the commencement of 1871, the general success of all the operations of ovariotomy cannot be less than sixty per cent." This result can be more fully appreciated by remembering that ovariotomy has been performed at least three thousand times, and that "almost all the cases terminate fatally, without surgical interference, within four years after the patient detects the tumor." Witness, however, what can be accomplished by consummate skill in this formidable undertaking. T. Spencer Wells has, in five hundred operations, saved, in each hundred respectively, 66, 72, 77, 78, and 80!

Bear in mind, while considering these facts, that no longer ago than 1864, when Dr. Peaslee advocated gastrotomy before the New York Academy of Medicine, "there was not another surgeon in the city to defend the operation." Bear in mind, also, that these are the results of an operation formerly branded as "barbarous and inhuman," while the supporters of it were denounced in more unmeasured and discourteous terms.

Durham (Holmes's "Surgery," vol. ii., p. 543), referring to nine fatal cases, in which a gastric fistula had been established for stricture of the œsophagus, remarks that "the operation was performed too late, and the powers of the patient too far exhausted to afford a fair chance of success." He, however, relates seven cases in which the stomach was opened for

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[1] Delaporte makes no distinction between favorable and unfavorable cases, but estimates all alike.

the removal of foreign bodies. The articles removed were as follows: A knife, six and a half inches long, retained six weeks; a knife, retained eleven days; a knife, nine inches long, retained two months; a knife, ten inches long, retained six weeks; a silver fork, retained eight months; a silver teaspoon, retained some months; a bar of lead, ten and three-quarter inches long, and weighing nine ounces. The patients all recovered.

Tyler Smith ("Lectures on Obstetrics," p. 706) states, upon the authority of Figueiria, that in seven hundred and ninety cases of Cæsarean section there were four hundred and twenty-four deaths and three hundred and sixty-six recoveries.

Recoveries from fearful abdominal injuries also bear witness to the fact that wounds of the peritonæum are not necessarily grave. In these accidents the issue seems to hinge upon one point, namely, perforation of the intestines. Where such is the case, and feculent material has escaped into the peritoneal cavity, the chances of recovery are greatly diminished. This fact is a weighty argument in favor of an early operation in cases of occlusion.

The following cases (and many similar could be quoted) will forcibly illustrate the amount of abdominal injury that can be borne without loss of life. The first is taken from Delaporte: an insane rag-picker first cut his throat, then made a large wound in the abdomen, and sprang from a second-story window head foremost into the street. He was carried to his room with "an enormous mass of intestines hanging upon the thighs and abdomen." M. de Closmadeuc, who was called, found him, seven hours later, almost lifeless. At his side were the greater part of the small intestine, the omentum, and the arch of the colon, all soiled with blood and dirt, and covered with old rags. Abdominal wound four inches long, meso-colon and mesentery wounded, two branches of the mesenteric artery divided. The arteries were tied, the abdominal wound enlarged, the viscera thoroughly cleansed and reduced. Complete recovery, without an unfavorable symptom.

Pollock (Holmes's "Surgery," vol. ii., p. 668) mentions a case which occurred in the practice of Mr. James, of Uxbridge. A lacerated wound, about nine inches long, was made through the abdominal walls by a bull. Mr. James found the man with a large quantity of small intestine and omentum protruding and covered with dirt, particles of straw, etc. He cleansed the parts, restored them, closed the wound, and sent the patient to St. George's Hospital, a distance of fifteen miles, in a cart. No unpleasant symptoms. Recovery complete.

4. Having given a pretty full *résumé* of the opinions of different authors upon the subject of gastrotomy, and having shown what the operation has already accomplished, it is necessary to examine the objections urged against it—objections still maintained by many excellent men. For this reason, if no other, they are entitled to a calm, unprejudiced consideration. As the objections referred to by Dr. Crisp (*op. cit.*) cover the whole ground, I will consider each in order.

Objection 1. "The want of success which has attended the operation up to the present time." Crisp replied that he thought statistics would show this to be untrue, though many of those operated on were nearly moribund at the time. I have given as complete statistics as time and opportunity would allow. They are truthful and will speak for themselves. They require no comment.

Objection 2. "The danger of peritoneal inflammation." This objection experience has shown to be erroneous. To say nothing of the numerous recoveries from fearful injuries of the abdominal cavity, of which we have given examples; of the safety of gastrotomy as practised by physiologists upon the lower animals; of *the results of a similar operation for the removal of foreign bodies from the stomach*, previously quoted from Durham, and of the unparalleled success of ovariotomy, statistics show that the statement is without foundation in reference to the operation for internal strangulation. Furthermore, the case which forms the text of this paper confirms the results of Haven's analysis of 258 cases of intestinal obstruction, that peritonitis is not of very frequent occurrence. Peritonitis is prevented, not caused, by early resort to the knife. Study the following table, given by Haven:

CASES.	Knuckles.	Twists.	Total.
Number of cases where there was no peritonitis, and where it seems probable the intestine might have been withdrawn or untwisted....	7	6	13
Number of cases rather more doubtful, but where no mention is made of peritonitis, or other obstructing cause..........................	10	..	10
Number of cases where peritonitis was mentioned....................	4	3	7
Number of cases where the intestine could not be withdrawn.........	4	..	4
Total..	25	9	34

The author remarks: "Considering that a large portion, if not all of the ten more doubtful cases in the second line of figures, may have properly belonged on the first line, and that peritonitis, in all the severe cases, may not have existed two or three days before death, there remained but *four* cases out of the 34 where we are certain that no operation could have been performed. . . . Indeed, it does not appear, from the preceding tables, that peritonitis is a very frequent occurrence in any class of intestinal obstruction." Again: "Acute peritonitis is not mentioned as often as we might at first be led to expect, a circumstance exceedingly favorable in the question of operation."

Delaporte states that numerous cases of abdominal wounds, accidental and intentional, demonstrate that peritonitis is not to be feared from exposure of the peritonæum to the air. Boinet (quoted by Delaporte) attributes peritonitis and purulent infection to the retention and decomposition of fluids in the abdominal cavity, and that where care is taken to remove these there is little danger.

Dr. J. Marion Sims (NEW YORK MEDICAL JOURNAL, April, 1873, p. 387) believes that most patients die, after ovariotomy, of septicæmia, and not from peritonitis, in consequence of the retention of septic fluids in the abdominal cavity. His experience in the Anglo-American ambulance at Sedan confirmed this view. Gunshot-wounds through the pelvic peritonæum were much less fatal than above the brim of the pelvis; in the latter cases, without exception, death occurred within twenty or thirty hours. The explanation is clear—in the one case the fluids had ready egress, in the other they were retained. The author closes thus: "The time will assuredly arrive when peritonitis, so called, will not kill, because we will learn that the effusions in the peritoneal may be as safely evacuated as those of the pleural cavity; that the danger will consist, not in opening the peritoneal cavity, but in keeping it closed, with its retained fluids, to poison the blood, and take the life of the poor sufferer. The time will also come when gunshot and other wounds of the abdomen, and perforations of the intestines, will be healed by opening the peritoneal cavity and washing out or draining off the septic fluids that would otherwise poison the blood; for death in all these cases is produced by the same causes, and in precisely the same way, and they will require the same plan of treatment."

Pollock states that the experiments of Travers, Gross, and others, show that wounds of the peritonæum, with wounds of the intestine, generally produce fatal peritonitis in consequence of the escape of feculent material (however little) into the abdominal cavity; that uncomplicated wounds of the peritonæum are less serious than is supposed.—(Holmes's "Surgery," vol. ii., p. 671.)

Objection 3. "That recoveries have sometimes taken place under the most unpromising circumstances; that even in intussusception the invaginated intestine has passed *per anum*, and the patient has done well; and, in other cases of constipation which have continued for a long time and but little hope has been entertained of the patient's recovery, the obstruction has suddenly been removed."

This objection, Crisp remarks, is one of the strongest, but that it will apply equally to strangulated hernia, many cases of which have recovered without operation, and that he has known eleven unsuccessful operations for the latter to occur in succession in one of the London hospitals, and he doubts whether gastrotomy would ever be attended with so unfavorable a result. I am, however, unable to see much weight in this objection. In the first place, the total number of recoveries from obstructions of all kinds is exceedingly small. In 169 cases collected by Phillips, 133 died; in 258 cases collected by Haven, 219 died. In most of the cases, furthermore, which have recovered, it is impossible to say whether or not the obstruction was of the same nature as in those which proved fatal. In absence, therefore, of positive proof upon this point, the argument is without force. There is, nevertheless, one form of obstruction, in which the diagnosis has been rendered positive, and for which perfect cure has been claimed by the spontaneous separation and expulsion *per anum* of the strangulated portion, namely, invagination. Of this form of obstruction Haven gives 63 cases in which there were 50 deaths, and 13 recoveries; three of these recoveries were the result of gastrotomy and 10 of spontaneous separation. But were all these reputed recoveries permanent? Duchaussoy (Delaporte) has collected 135 cases of intussusception, of which 97 died and 38 recovered; and in 14 eliminations four died before ten days, one after forty-four days, and one after ninety days. Many of those who apparently recovered had subsequent enteritis, or new obstruction from cicatricial contraction. In view of these facts, he is in favor of gastrotomy, especially as in this form peritonitis is less likely to be a complication. Pollock (*op. cit.*) states that his investigations lead him to the conclusion that no evil consequences result from the spontaneous separation and evacuation of an intussuscepted intestine, namely, "contraction or stricture of the gut." To support this assertion, he refers to but one case that can be accepted—a boy five years of age, in 1847, passed by stool "eight inches of the ileum, the cæcum with its appendages, and about four inches of the colon," after a few months' illness. Sixteen years after, he was living and well. In regard to treatment, he remarks: "It is but rational to suppose that in invagination of the intestine, operative interference holds out no prospect of relief, immediate or remote. The cases on record will justify this opinion." I have not been able to find "the cases on record;" while those I have collected do not confirm his dogmatic assertion against operative interference. As an example of the evil consequences denied by Pollock, I may mention the following case: Dr. Peaslee presented to the New York Pathological Society, February 22, 1865, five feet of gangrenous intestine which had been voided by a girl aged seventeen, after having suffered some time with symptoms of intussusception. She died four months after the expulsion. The autopsy revealed, at the seat of separation, "a constriction half an inch long, through which a pipe-stem could be passed." The statistics of Duchaussoy are also at variance with Pollock's statements. We thus see that, even in intussusception, the most favorable of all occlusions for spontaneous cure, Nature's efforts are neither very satisfactory nor reliable. Granting, however, that the cures were in every case complete and permanent, we arrive at the following result:

	Cases.	Recoveries.	Per cent. of Recoveries.
Spontaneous cure	195	48	25
Gastrotomy	6	3	50

I prefer to accept the minority report!

Objection 4. "That it is generally difficult to ascertain the seat of obstruction, as well as the nature of the obstructing cause." For the sake of argument, the truth of this assertion might be granted. In view, therefore, of the failure of ordinary means of making a diagnosis, and in view of the enormous fatality of the affection one seeks to discover, how important is it that he should resort to gastrotomy as the only means that can positively enlighten him; particularly when this method of diagnosis is in the direct line of the most successful treatment. Should such a course, moreover, prove a failure, or should the obstructing cause be found such as not to admit of operative interference, the exploratory incision would do very little harm.

But we are not disposed to admit that such great difficulty exists in the majority of cases. It is not *necessary*, however desirable it may be, to locate precisely the seat of the disease, nor to ascertain the exact nature of the obstructing cause. It would be far beyond the range of this paper to enter into a consideration of the differential diagnosis of the various forms of obstruction: we submit, however, in passing, that it has generally been found easy to ascertain whether the occlusion be acute or chronic; whether it be in the large or small intestine. If chronic, its seat and nature would most probably call for lumbar colotomy; if acute, whether its exact seat or nature be made out or not, abdominal section is the only resource, after the failure of less hazardous means, within twenty-four or forty-eight hours after the initiatory symptoms. The sooner the operation, the less the danger. In making a diagnosis it should be remembered that, according to the researches of Haven, Brinton, Duchaussoy, Fagge, and others, in the majority of cases of chronic obstruction the large intestine is involved, while the small is more frequently implicated in the acute form.

Objection 5. "The difficulty of ascertaining the existence of peritoneal inflammation, and, if present, its extent." Having shown, in reply to *Objection* 2, that peritoneal inflammation is not very common in intestinal obstruction, this objection need not detain us long. Should there be positive evidence of extensive peritonitis, it *might*, not necessarily *would*, contraindicate an operation; but, if there should be a reasonable doubt, or if the inflammation should be slight and local, gastrotomy ought to be performed, as statistics show that abdominal section would not materially aggravate the condition.

Objection 6. "That, when the abdomen is cut into, the obstructed bowel may not be found." This, as a general statement, is not only fallacious, but absurd. There is scarcely an operation upon internal parts to which a similar objection might not be brought. To concede it would be to strike a death-blow at the very root of scientific medicine; ovariotomy would have to be proscribed because it has happened "that, when the abdomen is cut into," the suspected tumor has not been found; lithotomy would have to be denounced because of the failure, in certain cases, to discover the stone at the time of operation; paracentesis would have to be given up because, occasionally, no fluid has escaped after the introduction of the trocar! The cases of strangulation which have been operated upon, moreover, show that, with very few exceptions, the seat and nature of the obstruction have been clearly recognized. I have ascertained also, by experiment upon the cadaver, that an incision, not over four inches in length, on the median line, a little below the umbilicus downward, is quite sufficient, generally, to admit of considerable inspection, and free digital exploration of the lower portion of the abdominal cavity, while an incision, about ten inches long, will allow a very full inspection of the whole cavity. How, then, any of the known causes of obstruction could escape detection, except in rare complications, is beyond comprehension. If, however, the seat or nature of the obstruction remain undiscovered, recourse could be had to enterotomy at the most favorable point, and an artificial anus established with reasonable hope of success, as is shown by the statistics.

The closing remarks of Dr. Peaslee, in his reply to the objections against ovariotomy, are full of meaning, and should be seriously pondered in this connection: "We may, however, mention two influences which diminish the success of all capital operations while still in their infancy: 1. So long as the profession generally is opposed to the operation, it will be deferred to the last moment before it is suggested to the patient, and the latter therefore falls into a very unfavorable physical condition for the operation. 2. Since the patient understands the operation is not recommended, but simply permitted, as a last resort, it is submitted to as such, and thus is quenched the confident hope of recovery, which is, perhaps, the most powerful of all the influences tending to secure it. On the other hand, when the profession generally have accepted the operation, it is seasonably recommended, and the patient may thus secure the best condition, both mentally and physically, to insure its success."

I cannot leave this portion of the subject without one reflection—let the opponents of gastrotomy bring forward objections based upon reason, if not upon fact, or let them remain silent until this operation shall have been fairly tried; else, in the estimation of those who prefer to investigate and think for themselves, rather than to accept the assertions of dogmatists, their arguments will justly be regarded as sophistry. In the words of Dr. Peaslee, "the time for oracular utterances in our art has passed, and every magisterial assertion should be challenged."

5. Having, I trust, succeeded in establishing the claims of gastrotomy to a fairer trial than has yet been granted it, I will, as briefly as possible, refer to the different forms of the operation, and the objects one may hope to accomplish by them.

The term *gastrotomy* is an unfortunate one. It would be far better to restrict it, as most German authors do, to the operation of opening the stomach, and to use the more correct term *laparotomy* for simple abdominal section. The term *gastrotomy* (or laparotomy), in its present connection, is applied to a large incision made through the abdominal walls for the purpose of searching for, and, if possible, of relieving internal intestinal obstruction.

If, after laying open the abdominal cavity, the operator should open the intestine, whether he intend to sew it up again and return it into the peritoneal cavity, or to establish an artificial anus, the operation receives the name of *gastro-enterotomy.*

Enterotomy is applied to the operation which has for its object the establishment of an artificial anus, whatever may be the process employed, or the seat of the operation.—(Delaporte.)

It is not the intention of the writer to discuss, at present, the comparative merits of these different methods. The choice between them is subordinate to the indications of the malady, as Larguier truly remarks, and to fully consider these indications would lead me beyond my bounds. I will confine myself to a simple statement of what I believe to be the particular merits of gastrotomy, based upon a study of the cases I have collected, and upon the views of others who have written upon the subject. What, then, can be accomplished by the operation? This is an important question, to which statistics give an encouraging reply:

1. The restoration of the patient to perfect health by the complete removal of the obstruction, without opening the intestinal canal.

2. In cases of intramural occlusion it enables the operator to discover its exact locality, and, after having removed the obstacle, he can sew up the bowel and return it into the abdominal cavity, or establish an artificial anus, as circumstances require.

3. Should the seat of the obstruction not be discovered, it enables the surgeon to form an artificial anus as near as possible to the affected point, in the hope that, the intestinal tension being thus relieved, the passage would become clear, and the

artificial opening subsequently close. This result is illustrated in Manlove's case (previously referred to), also in two interesting cases of Trousseau's ("Clinical Medicine," American edition, vol. iv., p. 220) upon which Nélaton performed enterotomy. The patients all recovered, and in each case the artificial anus closed spontaneously.

4. The seat of the obstruction being recognized, but found to be insuperable, it enables the operator, by the formation of an artificial anus, greatly to relieve the patient's sufferings, in mitigating the pangs of unavoidable death.

These remarks are not intended to apply to those cases of chronic closure of the bowel, the nature and seat of which can be well ascertained, and for the relief of which lumbar colotomy, as already stated, is the only remedy.

I feel strongly tempted, but must forbear, to reply to those who prefer enterotomy to gastrotomy in all cases of internal obstruction, among whom, more recently, is Dr. Frantzel, of Berlin, who advocates enterotomy in a paper in "Virchow's Archives" (vol. xlix., p. 164). It seems much more rational to use discretion in the selection of a method, than to employ any one form universally.

In what situation should the incision be made, and what should be the length of it? Upon the first point there is not a unanimity among authors; some prefer to have the incision as near as possible to the supposed seat of obstruction, while others are in favor of the median line. Without entering into an argument, I believe it to be far better, all things considered, to make the opening in the median line, higher or lower according to circumstances, but generally below the umbilicus. In this situation the incision could be enlarged at pleasure, without much trouble, and thus admit of a thorough exploration of the abdominal cavity. In addition to this, the lower portion of the linea alba offers a most convenient position (as can be readily seen upon the cadaver) for the establishment of an artificial anus in either the sigmoid flexure or the lower end of the ileum, thereby enabling the surgeon to cover two very important points by a single cut.

Had Luke made such an incision in his abandoned case, he might have prolonged the life of his patient, as I have already stated. Trousseau furnishes, indirectly and unwittingly, an excellent argument for the median situation, in the history of an operation for artificial anus performed by Jobert in the right iliac fossa. The patient died unrelieved, and the autopsy revealed a twist in the sigmoid flexure. Trousseau concludes: "If Prof. Jobert and I could have discovered beforehand the situation oft he obstruction, we should not have hesitated to prefer Littre's method, or, in other words, we should have made the artificial anus in the sigmoid flexure itself, and then, probably, we should have saved the patient." The whole difficulty would have been overcome by a free incision in the linea alba.—(*See* also answer to *Objection* 4.)

In relation to the length of the incision no rule can be laid down; the shorter the cut, *cæteris paribus*, the better, yet it should not be *so small* as to embarrass the operator. What Peaslee says of the length of the incision in ovariotomy will undoubtedly apply here: "A difference of one or two inches in length, so long as it does not ascend above the umbilicus, does not appreciably increase the danger."

For a description of the operation, the reader is referred to standard works on surgery. Pollock's remarks upon the subject are good.—(Holmes's "Surgery," vol. iv., p. 637.)

6. It remains for us, in conclusion, to consider the question whether gastrotomy for internal obstruction be a justifiable operation, and, if so, whether it would have been of any benefit to the late Dr. Tice.

I have already stated that in my judgment the number of operations is as yet too limited to admit of definite statements upon certain points. After as careful study, however, as I am capable of giving the subject (the facts bearing upon which I have endeavored truthfully to present to the reader), I am forced to the conclusion that gastrotomy for internal obstruction is not only justifiable but safe; that not only should it be resorted to whenever occasion may require it, but that to discourage or to oppose it, without *special reasons*, is censurable.

To the second portion of this question I am also compelled, though alas! too late, to return an affirmative answer. It was shown, in the case of Dr. Tice, that, while the chief factors in the production of the occlusion were morbid growths involving the ilio-cæcal valves, and a contraction of the caput coli by bands of false membrane, the immediate cause of the obstruction was hyperæmic swelling of the mucous membrane. The day after the removal of the parts, when this tumefaction had in a measure subsided, the growths upon the valves were considerably reduced in size.

Now, had a free incision been made in the median line, the seat of the obstruction would have been as recognizable during life as it was after death, and, having been discovered (although the *cause* might have escaped detection), an opening could have been made in the ileum just before it terminates in the colon, and an artificial anus established. The intestinal tension would thereby have been relieved, and with it the distressing symptoms; while in the course of time the tumefaction of the mucous membrane might have subsided, the intestinal circulation have become reëstablished, and the patient restored to health after a spontaneous closure of the artificial anus. The results already accomplished by gastrotomy prove this to be no chimera. Indeed, it is not difficult to conceive how the tumors upon the ileo-cæcal valves might have been removed, by ligature or otherwise, after the intestine had been opened.

When near his end, the patient stated to the writer that he was willing to have a *post-mortem* examination made, at the same time remarking that, although it would be of no benefit to him, it might prove of service to others. Should this paper be the means of rescuing a single sufferer from an untimely and terrible death, I am sure our departed brother, could he speak to us again, would say that, for such a boon, his untold suffering was not too costly a price.

ART. II.—*The Restorative Force of Nature in Delirium Tremens.*[1] By ELY VAN DE WARKER, M. D., Syracuse, N. Y.

THE literature of delirium tremens is extensive, and, with the exception of bloodletting, we stand where we did in the days when three-bottle men abounded, and it was considered no disgrace to finish a dinner by a quiet nap under the mahogany. It is true we have chloral, but this is only a new manner of meeting an indication as old as the first vintage. It is a new manner, and one not without danger. I am positive that accidents will occur from the use of the drug in this disease. To induce sleep, its use has to be pushed beyond all safety.

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[1] Read before the Medical Association of Central New York, at Syracuse, June 17, 1873.

Keeping our doses of opiates within the limit of perfect safety, we seldom procure sleep within the first forty-eight hours, and I believe still more often the patient has the misery of the third sleepless night. In our anxiety to relieve the patient, we too often overstep the bounds of safety. We do so from the force of necessity. Doses which were proper in amount and frequency, are continued, when the case proves stubborn, until a dangerous amount is taken into the system. It is often said that delirium tremens presents a strong tolerance of all opiates. While this may be true of the hypnotic action of the drug—and even in this it is not so much a tolerance as a resistance—it may not be equally true of the action of the narcotic on nerve-centres other than the brain. When the disease proves fatal, it is more generally—if not complicated with some fatal concurrent inflammation—from a rapid depression of the vital powers. As usually treated, I believe this may result from the nature of the treatment. We have all witnessed the depression which may follow large doses of narcotics in cases of poisoning by these agents; and the failure of vitality in the few fatal cases I have seen or heard of in uncomplicated delirium tremens very much resembles the depressed vitality exhibited by toxicosis from narcotics. This is only given as a possible explanation of the fatal prostration which may terminate these cases.

While speaking of the tolerance, or, as I prefer to term it, the resistance to narcotic agents in this disease, it is most extraordinary to what extent this may be carried. In one case, in the treatment of which opium and morphia were principally relied upon, two grains of opium and a fifth of a grain of morphia were given every two hours for eight consecutive doses, and then the period was lengthened to two, and finally to four hours, and still no sleep. The case had now reached the third day, when the patient became suspicious of me and his attendants, and refused to take any more. Chloral had been prepared for him, but his nurse could not administer it. The solution of chloral was made by dissolving four scruples in four ounces of syrup and water. The directions were, to take one-fourth of the quantity every half-hour. The patient suddenly changed his mind and concluded to take the mixture, but, instead of taking it from his nurse, he helped himself to it and drank the contents of the bottle at once. In the course of twenty minutes the man was asleep. He would rouse up every hour or so to drink, and would then fall asleep immediately after. This state continued for nearly two days, when the man was fully restored. This enormous dose of chloral had a very happy effect; but no man here believes that this is a safe dose of the drug, nor do I believe any one would prescribe it as an initial dose. Had eighty grains of chloral been given on the first or second day when insomnia existed in its greatest force, I do not believe it would have induced sleep. When the patient helped himself to the contents of the bottle of chloral solution, his case had reached the third day, when a spontaneous abatement was the usual consequence.

Chloral, when given early and in safe doses, is no more speedy and certain in its narcotic effect than opium or morphia. I treated one case by giving twenty grains of the drug every three-quarters of an hour. In this way an ounce was given. Besides this, every four hours twenty drops of cannab. Ind. extract were given, combined with a drachm of laudanum, and, after fifty-two hours of insomnia, the patient passed into a profound sleep. Now, I believe that in a few more hours this man would have slept without the use of narcotics. Insomnia is but one symptom, among many others, of delirium tremens. It is the symptom to combat which we make our best efforts. It is so distressing and so prominent that it is difficult to resist our own desire and the importunities of the friends to procure sleep. But the theory, that if sleep is induced the disease is cured, is, in my belief, wrong. It is not uncommon to find that after sleep the muscular tremors and the hallucinations continue, although in a modified form. It stands to reason that the peculiar brain-changes which cause insomnia are in no way influenced by introducing an agent which removes an effect and not the cause. Sleep is a natural result, when, from time or remedies used, these brain-changes are removed. While I do not deny that opiates may cause sleep before the expiration of the second or third day, I believe this result to be very rarely attained, and, if attained, would not, from the mere fact of induced sleep, cure the disease. To define my position more perfectly, I shall state that delirium tremens may be divided into two grades: one the result of a sudden excess in a healthy person usually temperate, that class of whom Christopher North says "only sober men ever get drunk;" and the other the result of long-continued excess which must result in serious changes in the nerve-centres. In the first, sleep is without much trouble procured, and in these cases when that is secured the patient is mainly relieved. In this case there is little mania or tremors, simply insomnia. In the last class it is almost impossible to induce sleep in the early stage, and the mania is most active, and the tremors marked. In this rough grouping it is the latter class to which I intend my remarks to refer, and in this class insomnia is but a symptom of a grave pathological condition, and in the treatment of which any agent calculated to act solely in the direction of sleep is of little avail, until, as the morbid condition gradually amends in from two to three days, sleep is procured, either spontaneously or is induced by a comparatively mild dose of an opiate.

Neither in the use of arterial sedatives, such as digitalis, have I seen the marked change in the symptoms of the disease which some writers claim for it, and we know there are fatal cases occurring from the excessive use of digitalis in this disease. One of these cases occurred in this city. The same remarks made in regard to the use of opiates apply to this class of drugs. The disease offers to them the same resistance. With digitalis we have the additional danger of cumulative or suspended operation.

These doubts upon the routine treatment of delirium tremens I had long entertained, but not in sufficient force to lead me to cut adrift from the usual mode of medication in this disease. It was not until last January, when I saw another treatment carried out in the Onondaga Penitentiary, that I determined to try my ideas in the first case of uncomplicated delirium tremens which might come into my hands in private practice. The treatment at the institution named was simply no treatment at all. This did not occur, I am sure, from any want of kindness or attention on the part of the officers of the penitentiary—for I can personally testify to the uniform kindness with which sick convicts are treated—but from the fact that no medical officer is usually present except upon stated days. Thus, when the medical officer makes his rounds, he may find a case of delirium tremens has just been released from the "octagon," a cell set apart for these cases, perfectly cured, the prisoner having been admitted three days before; or, that a case two or three days old is still confined in the "octagon." The institution being a penitentiary for short-term prisoners, it is consequently a penal inebriate asylum mainly. A great many cases have therefore been presented at the prison, a large proportion of them receiving no treatment beyond a dose of salts to unload the bowels. A fatal case of the disease, I am told, never occurred in the prison. Some of the unfortunates have suffered in that prison the third attack of the disease. Mott Yates, an "old offender," as he is called, has had two attacks during my term of service, both occurring immediately on his admission. On the first attack I saw him under (not Mott's first attack), he had just been removed from the "octagon" perfectly quiet and without any tremors, in fact, well. He had not been given any medicine. On the second attack, about two months after the first, I saw him the morning after his admission. The mania was most active, the tremors of the muscles marked, the pulse was rapid and full. I took the hint from his first treatment, and gave him a large dose of salts (Epsom). He drank this willingly. This was all the patient had in the way of medicine. On the third night he was quiet, and in the morning walked in the gallery, and on the fifth day was working at his trade (tailoring), without a complaint to make to me while on my rounds. There was one thing which struck me as remarkable in the cases thus non-treated, and that was the rapid convalescence of the patient; there was no period of prostration, mental and physical, which we usually observe as the sequelæ. There was also little impairment of the digestive function, the patients taking kindly to the prison dietary.

Now, while this plan is not without its dangers, as concurrent inflammations may occur, and prove fatal, if the patient is not under observation, yet it teaches a valuable lesson. It demonstrates the fact that, after the lapse of a varying period, the disease has a tendency to terminate spontaneously in sleep. So far as a limited number of cases can go, this is proved. This same feature is observed in other forms of brain-disease. Few cases of acute mania are characterized by insomnia which do not present the same feature of spontaneous abatement. Many writers on insanity condemn the use of opiates. This movement to lessen the use of narcotics in mental diseases began years ago, and has been steadily gaining ground. On general principles alone, so far as delirium tremens presents brain-symptoms, we find grounds to condemn the present free use of opiates. But, when from actual practice we find that the disease can be successfully treated without opiates, and that the free and even dangerous use of this class of drugs does not cut the disease short, we have a still stronger inducement to try some other and less hazardous treatment.

If we reflect for a moment upon the manner in which an attack of delirium tremens is brought about, we may form a presumption of the pathology of the disease which will lead to a practical plan of treatment. Almost invariably the attack is induced by over-stimulation, to the neglect of proper food. It may be a mad debauch continuing for days, during which time no regular meals are taken, the extreme excitement of the stimulant masking the healthy sense of hunger, and thus the great nerve-centres, which seem to respond to the loss of nourishment before the other organs, give way suddenly, and delirium and sleeplessness are the result. To the poisonous influence of alcohol upon the nerve-centres and other organs, we may credit such other symptoms as the loss of proper nourishment fails to explain.

In cases of chronic indulgence to excess, we have the same imperfect nutrition present as a factor—the only difference is, that it extends over a longer time, more alcohol being taken and less nourishment from day to day, or even week to week, until the nerve-centres are overpowered by the poison and mal-nutrition, and delirium results. Now, the interpretation I place upon this view of the pathology of the disease is that the most rational indication for treatment is to feed the patient. The food must be of such a nature as to repair in the quickest manner the damage to the brain and other nerve-centres. The food must also be in the most concentrated form, as it will be next to impossible to induce the patient to take large amounts at a time, and, even if the patient offers no resistance to feeding, we have generally an irritable stomach to deal with, which would be liable to reject a large amount of food if given at once. I have had but one opportunity to test the value of this mode of treatment in private practice since January last.

The case of delirium tremens offered by J. R. was well calculated to test the value of non-medication. He was a young man, thirty-five years of age, always healthy previous to this attack, and following an active business; there was nothing unusual either in the onset or symptoms of his attack.

I saw him first on March 8th. The first and only medicine I gave him was three compound cathartic pills, United States Pharmacopœia. Cooling drinks were given whenever the patient demanded them. The pulse was running very high, and, although strongly tempted to give digitalis, I refrained. The treatment proper consisted in giving food in small and frequent quantities. The expressed juice of raw beef, seasoned with a little salt, was given in spoonful doses. Raw egg in milk was alternated with the beef-juice in equal amount. At first it was not found possible to give food at regular intervals, on account of the excitement of the patient.

On the 9th, the first twenty-four hours of insomnia, he was much quieter, and took food willingly, and was very anxious to get well. The muscular tremors were as well marked as the day before, but the patient's mind was much clearer. The doses of the beef-juice and egg-and-milk would average about six to the hour. The bowels, about daylight, moved off very freely. On the 10th, I found the man very much better. He had his first sleep between 5 and 7 A. M., nearly two hours. He passed very much such a day as on the 9th. No new hallucinations were invented, but he could not realize but those of the day before were real. The nourishment was continued in increased quantity during the day. At night I instructed his friends not to disturb him to give food if he was disposed to sleep. At a little past ten o'clock P. M., he went to sleep, and slept until nearly four A. M. on the 11th, when the attack was practically over. On the 12th, he was out on the street looking after his business. He was free from muscular tremors, had a good appetite, and said he felt as if he had not been sick. I do not believe this man would have made so rapid a recovery if treated in the routine manner. The more disposed we are to recognize the restorative force of Nature in any disease, the better it is for our patients. We have nearly all of us abandoned the use of stimulants in the treatment of delirium tremens, although nearly all the text-books on practice still teach it. This was indeed a great reform. But I believe we can make a still further reform, and greatly restrict ourselves in the use of opiates. We must remember that insomnia is not the disease we are called upon to treat, it is only a symptom. Opiates can in no sense be a better treatment of the disease than the stimulant plan we have now abandoned. The true treatment, I believe, lies in the direction of nutrition. The nutrition must consist in food the most readily assimilated by the impoverished brain and nerve-centres.

ART. III.—*Respiration as affected by Conditions of the Atmosphere.*[1] By EZRA R. PULLING, M. D., New York.

THE various phenomena associated with respiration, whether they are physiological or pathological, can only be satisfactorily studied in connection with the physical agents which sustain or influence that function. The density of the air, its temperature, and the amount of solid, fluid, and gaseous matters which it contains, all have an important bearing on hæmatosis, and on the elimination of the effete products that normally escape by the lungs.

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[1] Read before the New York Medical Journal Association.

An increase in the density of the atmosphere (the proportions of its constituents remaining unchanged) increases the activity with which its oxygen unites with bases exposed to its action; this being equally true, whether the attendant phenomena be those of combustion or otherwise. The process of oxidation going on in the human body, so far as it is governed by physical causes alone, forms no exception to this rule; we must, then, seek in the vital factors of this process the forces that regulate and control it.

While the vital forces preserve their physiological integrity, a nearly uniform hæmatosis is maintained under wide variations in the density of the air. The activity of this function is mainly determined by the *wants* of the system, which requires a definite weight of oxygen, depending on muscular exertion, the amount of ingesta, and other circumstances. Theoretically at least, the volume of air inspired under a given physiological condition should bear an inverse ratio to the amount of free oxygen it contains. For the maintenance of the aëriform contents of the vesicles in proper condition, the amount of statical air in the lungs should also bear a direct relation to the rarity of the atmosphere.

There is no doubt that changes in the density or composition of the air are provided for, to some extent, by corresponding alterations in the depth and frequency of respiration; while the long-continued action of any cause affecting its constitution, undoubtedly evokes physiological changes of a permanent character, leading to such a development of the lungs that, by ordinary respiration, a normal hæmatosis may be maintained. The ratio which the capacity and expansibility of the thorax bear to stature and muscular development differs considerably in the aboriginal races, respectively inhabiting depressed basins and lofty plateaux. The dwellers among the higher Alps, whose ancestors, from time immemorial, have occupied regions eight or ten thousand feet above the level of the sea, are known to have an average thoracic capacity much above that of the residents on the plains of Central Europe. In regard to the Indians inhabiting the lofty plateaux of

Peru, Mr. Darwin quotes from Alcide d'Orbigny, that, "from continually breathing a highly-rarefied atmosphere, they have acquired chests and lungs of extraordinary dimensions," and that "the cells of the lungs are much larger and more numerous than in Europeans."

In spite of the capacity of self-adjustment exhibited by the respiratory organs, great and rapid changes in atmospheric density disturb more or less all the phenomena of respiration. Since the efficiency of hæmatosis is measured, approximately, by the evolution of carbonic acid, we should expect that the amount evolved would vary in connection with such disturbances. Physiologists, however, are not well agreed in regard to the influence which changes in atmospheric pressure exert on its production. Lehmann refers to some experiments of Vierordt, which go to show that, under a diminished barometric pressure, an increased amount of this gas is exhaled by the lungs. His experiments have reference only to such atmospheric variations as are due to meteorological changes occurring at a fixed elevation. They are, of course, slight in degree, and their influence on the pulmonary excretions is probably subordinate to other causes, such as humidity and temperature. Lehmann's own experiments, made on small animals confined in an atmosphere artificially rarefied, produced results opposite to the foregoing.

All these experiments are liable to be vitiated by sources of fallacy which cannot well be avoided in connection with the statical carbonic acid in the system, whose amount, varying in accordance with atmospheric pressure, is by no means trivial. Lehmann says that it is present, not only in the blood, but also in the lymph, the parenchymatous juices of many organs, and even in the urine. Its exhalation from a fluid in which it is held in solution occurs whenever atmospheric pressure is reduced; in this way it may be even set free from some of its chemical combinations, as in the case of bicarbonate of soda.

The amount of carbonic acid which can be absorbed by a given fluid or colloid substance is proportioned to the pressure under which absorption takes place. If atmospheric pressure is suddenly increased, its exhalation from the colloids and fluids of the body is temporarily diminished by the amount of the gas taken up through the increased absorptive power of the blood and tissues. Under diminished pressure the phenomena are reversed, exhalation temporarily exceeding production.

In regard to the actual formation of carbonic acid in the body, I think it is now safe to assume that, temporarily, and until respiration becomes adjusted to the change of density in the atmosphere, it is somewhat increased by increased pressure and diminished by diminished pressure. Its production has such a relation to important vital processes, that any cause which tends to increase or to diminish it may have a potent influence for good or for evil. It has a practical bearing on important questions of hygiene, and must greatly influence us in regard to sending our patients to elevated regions. The subject is full of interest, and needs further investigation by physiologists.

Any reduction in the supply of oxygen necessary for complete hæmatosis, whether that reduction arises from diminished density or a diminished percentage of the gas in the inspired air, awakes the *besoin de respirer*, the hunger for oxygen. In healthy lungs the change, unless excessive, simply tends to increase the frequency or the depth of respiration, or both, without exciting pain, uneasiness, or a sense of constriction or suffocation. In a state of disease, however, all of these symptoms may occur, on account of the reduction in the *complementary* capacity of the lungs and their consequent inability to expand sufficiently to compensate for the change in atmospheric conditions. Patients who have much disorganization of the lung-tissue should ascend to elevated stations by easy stages only. Where the change is great and sudden, not only are the unpleasant symptoms I have mentioned liable to occur, but the expansion of the pulmonary cells may occasion vesicular emphysema, lacerations, hæmoptysis, and other serious accidents.

While there are many cases in which consumption and other diseases affecting the organs of respiration are benefited by the rarefied air of high elevations, we must recollect that these effects are influenced greatly by associated climatic conditions. For example: A locality on the windward slope, and near the summit of a high mountain-range, is usually unfavorable to diseased lungs. The current of air driven against the mountain has its capacity for moisture progressively decreased with its temperature, as it is forced up the slope, till it reaches a point varying in altitude with the amount of humidity, where condensation necessarily takes place. The mist and fog thus produced are peculiarly prejudicial to consumptives.

On the other hand, the leeward side of lofty ranges is usually very dry; the wind, descending from the summits, has already deposited its moisture, and its hygrometric capacity is increasing. Thus, our Great Interior Basin, bounded by two lofty mountain-ranges on the east and west, and having an altitude of from four to eight thousand feet, offers in most parts a desirable residence for patients requiring a dry atmosphere. Where profuse bronchorrhœa accompanies phthisis, or occurs as an independent affection, the benefits produced by inhaling such an atmosphere are often very striking.

The influence of very great altitudes (over ten thousand feet) on pulmonary phthisis is not well established. The varying and indeed opposite effects described by different observers are perhaps due to modifying causes like those I have mentioned, which have contributed to favorable or unfavorable results. I think that, on the whole, the evidence shows that great elevations are favorable to a large proportion of phthisical patients.

When atmospheric pressure is reduced, that portion of the gases of the blood held by simple absorption must, as we have seen, be diminished, and, if the circulation remain as before, the processes of oxidation are liable to be thereby weakened and retarded. The conditions of a normal hæmatosis can, however, be partially restored by an increase in the rapidity of the circulation, in proportion to the reduction in the capacity of the blood for holding its condensed gases. That such a change in the circulation occurs I think probable. Many years ago I carefully observed the pulses of five persons at the level of the sea, and subsequently at an elevation of about three thousand feet, each series of observations being continued for some weeks. I cannot say that the observed changes were very great, nor was this to be expected from such a comparatively small change of altitude, but they were quite appreciable, consisting in a slight increase in both the force and frequency of the pulse in the more elevated region. This was before the advent of the sphygmograph, and, of course, I had to trust to tactile impressions. It would be desirable, by the aid of this instrument, to obtain tracings of the pulse in a considerable number of persons at different elevations, including the highest habitable regions, for it is a matter of practical importance in its connection with pulmonary affections. Changes in the force and rapidity of the circulation have, I think, considerable influence on incipient tuberculosis. It is a long-established clinical fact that a reduction in the force and volume of the pulse precedes and attends the early stages of consumption. Some of the benefit resulting from mountain air in incipient phthisis may, therefore, be owing to its dynamic effects on the circulation.

It is not solely through changes in the density of the atmosphere caused by altitude that its effects on respiration are determined; these effects may vary greatly in the same barometric plane. In an atmosphere rarefied by high temperature, and in which a large amount of aqueous vapor takes the place of an equivalent volume of air, the free oxygen may become so reduced as seriously to interfere with the process of respiration. To a person inhaling such an atmosphere, the effect may be like that of breathing "the difficult air of the iced mountain-top." An example will illustrate this point more fully: A cubic foot of dry air under a pressure of 30 inches of mercury, at a temperature of 38° Fahr., weighs 560 grains, and contains 129 grains of oxygen. If this atmosphere be raised to 98° Fahr., and become saturated with moisture, the same volume of it weighs but 489 grains, of which 19 grains are aqueous vapor, leaving but 470 grains of air, containing 108 grains of oxygen; that is to say, dry air at 40° Fahr. contains about one-fifth more oxygen than saturated air at 98°.

The dyspnœa which damp weather causes to patients in whom the expansibility of the lungs is interfered with, is doubtless *partially* due to the reduction in the amount of free oxygen in the inspired air. The great relief from this symptom, sometimes experienced by consumptives who are sent from the damp districts bordering the sea-coast to dry localities in the interior, is, in some degree, owing to the diminished volume of air necessary for respiration in the less humid region, whereby the lungs are partially relieved from the exertion of forced inspiration which the loss of lung-tissue renders necessary.

The physiological relations of *temperature* to the organism are of the highest importance. Thermal changes, acting through the atmosphere, affect readily all unprotected surfaces of the body. Of the entire area to which the air has access, we find that the free surfaces of the pulmonary vesicles form the larger portion. When we reflect that the whole mass of blood is brought into immediate relation with this extensive pulmonary surface, we might be led to suppose that variations in the temperature of the inspired air would be liable to produce pathological results of a dangerous character. We find, however, in mammals, a structural as well as a functional provision for the protection of the centres of the circulation from vicissitudes that would otherwise prove disastrous.

It may assist us to obtain clearer views of the structure and function of the human lungs, if we consider for a moment some of the relations which exist between the lower sub-kingdoms of animal life and their environment, whether aqueous or aërial.

Among invertebrata each species is usually confined to the whole or part of a zone, often narrow, bounded by isothermal lines, which indicates that the conditions of its existence are mainly determined by temperature. In species that have special organs of respiration, these organs are in an almost rudimentary state, and are incapable of sustaining that function except under nearly unvarying external conditions. The range of the species, therefore, as well as that of the individual, is usually very limited.

Vertebrata have generally a much wider range of existence, due to the greater capacity they possess, through their more complex organization, of adjustment to varieties of thermal conditions, but nothing like complete adaptation to great variations of temperature is found beneath the class of mammals. In this class, and particularly in man, we find respiration taking place under special conditions, which I think have not hitherto received the attention their importance demands. To one of these I wish to call attention, because I think it has a practical significance which should not be overlooked.

According to recent authorities, the volume of air admitted at each ordinary inspiration bears to the residual contents of the vesicles the ratio of one to ten, or at most one to eight. Now, what is the office of this great amount of statical air? It is manifest that the process of respiration would be more effective in aërating the blood if the aërial contents of the lungs were completely changed with each respiratory act, so that pure air should come in contact with the delicate investing membrane of the air-cells, instead of a compound containing from three to seven per cent. of carbonic acid, which is the usual condition of that in the human lungs.

The residual air in man and in all mammals acts in preserving uniformity of temperature in the air-cells at a point little below the standard of animal heat, and its volume, as compared with that of the tidal air, is nearly in proportion to the normal temperature of the animal.

Since an ordinary inspiration adds only about one-eighth to the statical air previously occupying the human lungs, it can change its thermal condition by only about one-ninth of the difference between its temperature and that of the external air. Thus, if the atmosphere were at 62° Fahr., and the air-cells at 98°, the difference being 36°, the temperature of the gaseous contents of the vesicles would suffer a reduction of only about 4°, as the immediate effect of the act of inspiration. The loss of temperature is actually much less than this, for the air, in passing through the trachea and bronchi, abstracts so much heat from their surfaces that it has acquired nearly the warmth of the body before it reaches the air-cells, or even that point in the smaller bronchial tubes beyond which it passes by diffusion alone. If, as stated by Dalton, ciliary action in the smaller bronchi produces outgoing currents of air along the inner surfaces of the tubes, it appears like a provision for warming the inspired air, at the expense of that which is ex-

pired, without directly abstracting heat from any part of the pulmonary tissues. The incoming currents of cold air may thus be supposed to be coated over and heated by a peripheral film of mixed gases and vapor, and in this way brought into a thermal condition approximating that of the vesicles.

In those species of animals whose temperature varies but little from that of the medium in which they live, no precautions against the effect of thermal changes on the organs of respiration are necessary. Reptiles have, in most cases, pulmonary receptacles approaching to the condition of simple sacs: they fill them by deglutition, and after an interval empty them almost completely. The lungs of a frog, according to Prof. Owen, can be so thoroughly emptied of air, while *in situ*, as to become reduced to the size of a small pea. In some Chelonians the volume of tidal air nearly equals that of the solids of the entire body.

On the other hand, in birds, whose temperature is higher than that of mammals, a very large proportional amount of space is required for the residual air, which permeates the entire osseous system, while the volume of tidal air is comparatively small.

The fact that extraordinary safeguards against the occurrence of changes of temperature in the air-cells are found in all warm-blooded animals, certainly indicates that such changes are calculated to be extremely injurious to birds and mammals. These safeguards are, however, very effective, and I think we may safely assume that in man, with the exception of some irritant effects on the primary air-passages, the *inhalation* of *dry* air, though very cold, does not ordinarily produce any injurious consequences to the respiratory organs, even of patients laboring under pulmonary diseases.

The very considerable increase in the amount of carbonic acid eliminated from the system by the lungs, under a decided reduction of atmospheric temperature, is a well-known phenomenon whose proximate cause has not, I think, been fully explained. We can readily appreciate the necessity for a provision to compensate by increased oxidation (which implies increased heat) for the cooling of the surfaces of the body from diminished temperature. The *besoin de respirer* appears to be intensified by the impression of cold on the surface of the body, and possibly to some extent by its direct action on the respiratory organs.

The former effect is shown by the gasping and sense of suffocation caused by the sudden immersion of the body in cold water. Under a diminished temperature the respirations are increased both in depth and frequency. Lehmann states that the *percentage* of carbonic acid is also increased. I think this may depend on the fact that inequality of temperature promotes the interdiffusion of gases. This would occur between the tidal and residual air in the lesser bronchial tubes, with a rapidity in some degree proportioned to the difference in their thermal state. I have not seen it stated that the mere inhalation of cold air, the surface of the body being kept warm, increases the production of carbonic acid to any appreciable extent. Probably an immediate cause of its increased production, when the surface of the body is cooled, consists in the increased quantity of blood sent to the lungs during its recession from the superficial capillaries.

When air which is colder than the body is inhaled, it mingles at once with the residual air, and, as a result of its increase of temperature, its capacity for moisture is correspondingly increased, and it accordingly takes it up from the lungs. The same thing occurs when the air is as warm as or warmer than the body, provided it does not contain vapor enough to become saturated at the vital temperature; but, if saturated at this point, it can take no moisture from the air-cells. Under such circumstances the lungs cease to eliminate the vapor of water.

The exhalation of aqueous vapor by the lungs is doubtless of much importance in the animal economy. Its suppression or serious reduction is attended with great discomfort, and is probably productive of considerable functional disturbance. It seems likely (though exact proof is wanting) that the highly-septic organic matter exhaled from the lungs is intimately associated with the watery vapor, and that the partial suppression of the latter is accompanied by the retention of a portion of the noxious material which should be eliminated with it.

Most physiologists estimate the average volume of each inspiration at about 20 cubic inches, and the frequency of respiration at 18 per minute, which would amount to 300 cubic feet expired in 24 hours. This, if saturated with aqueous vapor at the temperature of the body, would contain 5,700 grains of water.

Valentin, however, states that the mean amount of aqueous vapor exhaled from the lungs in 24 hours is 8.333 grains, which would imply an amount of expired air larger than the foregoing estimate by nearly one-half, or 438 cubic feet in 24 hours. The expired air can remove only the amount of vapor required to saturate it, so that there is an apparent error in some of these estimates, but, I think they may lead to the inference that the exhaled pulmonary gases are saturated with moisture, or nearly so. Indeed, if we oppose a slip of polished glass or metal to the current of air as it leaves the mouth, a visible film of moisture is deposited on it, even when its temperature is within a few degrees of that of the body. The expired air being saturated when it leaves the lungs, the amount of moisture which these organs eliminate from the blood must bear an inverse ratio to the amount inhaled.

The hygrometric variations in the atmosphere, at our high summer temperatures, must frequently be sufficient to cause very great differences in the exhaled moisture.

There are conditions of the inspired air, even when it is below the animal temperature, in which it may be prevented from carrying off moisture from the body by the lungs. This may happen when it is laden with fog. The small spheres of water, often microscopic, floating into the lungs on the current of inhaled air, are sometimes sufficient to saturate it when vaporized. Fog can undoubtedly become an agent by which the temperature of the statical air in the lungs can be reduced to an injurious extent. Its globules, entering the lungs, abstract from the pulmonary tissues, directly and indirectly, the amount of heat necessary to convert them into vapor. That this amount is by no means trifling, will appear when we reflect that the latent heat of aqueous vapor is such that the evaporation of a few grains of water is sufficient to reduce the entire statical contents of the lungs many degrees.

The inhalation of fog is attended with other injurious consequences, for its minute vesicles, offering such an immense absorbing surface in the aggregate, readily take up from the air the organic and gaseous impurities it contains to the point of saturation. In this way irritating and septic matters reach the air-cells in much larger amounts than would be received from the atmosphere in its usual condition. In the vicinity of New York, fog generally has an acid reaction, and I presume this is its ordinary state in the neighborhood of large cities. This is doubtless one cause of its pernicious effects on diseased lungs.

We must bear in mind that a considerable amount of condensed moisture may be present in the air without being visible, and the injurious effects of atmospheric dampness on the organs of respiration are oftener due to this invisible suspended moisture than to the vapor held in combination by the air. A fall in temperature of 20° Fahr., say from 70° to 50°, which often occurs during spring and autumn evenings, reduces the hygrometric capacity of the atmosphere by about one-half; so that if its humidity amount to more than one-half of saturation, which it usually does in the neighborhood of the sea, a part of it condenses into minute floating globules, which, unless very numerous, do not affect the transparency of the air. This atmospheric dew, however, is capable of producing quite as decided effects on irritable lungs as visible fog.

While the lungs exhale septic material, they also collect the solid as well as fluid molecules floating in the inspired air. These may be organic or inorganic, soluble or insoluble. A common example of soluble particles, widely disseminated through the atmosphere, consists in the minute crystals of chloride of sodium, arising from the sea-spray thrown up from the agitated surface of the ocean, which, evaporating, leaves the saline particles in a state of extremely minute division, rendering them capable of suspension for an almost unlimited period. The atmosphere of the coast and its immediate neighborhood seems to be more highly charged with these particles than that of the sea remote from land, probably because a larger amount of spray is thrown up along the shore. Spectroscopic indications of chloride of sodium are found far inland, and probably no locality is altogether free from it.

The purest atmosphere holds in suspension an amount of solid material which would soon obstruct the bronchial tubes and air-vesicles were its elimination not provided for. The solid insoluble particles which are inhaled are mostly embedded in the bronchial mucus, and, as the secretions of the air-passages are propelled toward their outlet by ciliary action, these foreign matters are finally ejected with them. When fine dust is, however, inhaled in any considerable quantity, a portion of it reaches the air-vesicles, whence it is not so easily dislodged. When a dust-laden atmosphere is inhaled for a long period, a considerable deposit of its lighter and finer particles undoubtedly takes place in the air-cells.

The entrance of such solid material into the lungs may act as an exciting cause of pulmonary phthisis to a greater extent than we have hitherto suspected. I think, at least, that we may trace a relation between the admission of dust and the deposit of tubercle in the lungs.

Flint states, in his work on "Physical Diagnosis," that the cells at the apices of the lungs are most permeable to air, and he quotes from Cruveilhier to show that the cells of the superior lobules are the first to expand on inspiration. We should expect that the inhalation of solid matters from the atmosphere, so far as it acts as a cause of tubercular deposit, would first affect those air-cells by which ordinary respiration is chiefly carried on, and which are consequently most liable to receive the floating particles which the air contains. We find that this theory corresponds with observed facts. Tubercular deposit, it is well known, almost invariably commences at the apex of the lung, extending to other regions nearly in the order of their accessibility to air.

Not only is the introduction of foreign material to the air-cells in many cases the initial point in the series of pathological events which constitute the local lesions of phthisis, but I think clinical observation shows that it may also be speedily followed by tubercular deposit even when no previous dyscrasia was evident. It is not difficult to comprehend how this may occur. It is liable to arise from deficient hæmatosis, due to a mechanical obstruction to the diffusion of gases, caused directly by the foreign material, or by the morbid secretions which it elicits from the mucous membrane. The presence of such irritating material on the free surfaces of the delicate tissues investing the air-cells is followed by changes, greater or less in degree, in the capillaries which surround them. The air-cells may, however, partially or wholly cease to perform their functions before the vessels connected with them become obliterated, in which case blood passes through certain pulmonary capillaries without proper aëration, and is returned to the systemic circulation bearing with it the constituents which belong to its venous condition. Such a transmission of effete products into the arteries must produce a dysplasmatic state of the blood, the very condition that promotes tuberculosis.

The loss of permeability in the walls of the air-vesicles is, however, soon followed by closure of the surrounding capillaries, which, I think, must be considered a conservative process, as, by sealing up these vessels, the blood is diverted into other channels where due hæmatosis is maintained.

The presence of a great amount of dust in the atmosphere is likely to outweigh all advantages that a climate otherwise suitable for consumptives may afford. One of the chief advantages of a sea-voyage for phthisical patients consists in the almost complete exemption it affords them from the injurious effects of dust.

The presence of minute organic particles constitutes a serious vitiation of the air, and often leads to important pathological results. All the contagia which are propagated through the atmosphere are probably received into the system in this form. Air which is vitiated by respiration contains organic exuviæ in a state of such minute division that the microscope can scarcely educe its specific characters; yet it is highly septic, and, if it be either retained in or reintroduced into the air-cells, is no doubt capable of producing local irritation, and, under some circumstances, toxicæmia from absorption.

We have exhalations of an organic character contributed to the atmosphere by the flora of particular localities; that they are capable of producing marked effects on the air-passages, no one who has suffered from "hay-asthma" will be disposed to deny. Pulmonary affections are, beyond question, often influenced by the peculiar qualities of the atmosphere derived from the vegetation prevailing in various regions. We know that there are portions of many officinal plants which, when floating in the air in a finely-divided state, affect powerfully the respiratory organs, as, for example, ipecacuanha or capsicum.

The effect of vegetation in imparting therapeutical properties to the atmosphere is sometimes very decided; the most noteworthy instance within my knowledge is to be found in the remarkable amelioration of symptoms occurring in phthisical patients who resort to the forests of some of the Southern States, where the *Pinus Australis* is the prevalent growth. Some time ago I published a short account of its remedial effects, in the New York Medical Journal; I may add that, since that time, I have received further confirmation of its extraordinary efficacy.

Art. IV.—*Chloral in Pertussis.* By P. Brynberg Porter, M. D., Attending Physician to the New York Infant Asylum, the New York Free Dispensary for Sick Children, and for Diseases of Children at the Demilt Dispensary.

In the August number of the New York Medical Journal I reported a number of cases of whooping-cough which had been treated with this remedy, and stated that I believed it to be a most valuable agent in diminishing the frequency and severity of the paroxysms, as well as in positively cutting short the disorder. Since then I have used chloral almost exclusively in the large number of cases which have occurred in my dispensary service, with the view of further testing its powers. While I have been substantially confirmed in the opinion above stated, and deem it a most efficient remedy in the vast majority of cases, I must confess to a feeling of slight disappointment in not finding it accomplish quite all that I had anticipated in this troublesome affection. Thus, in my former paper I mentioned that not in a single case, as far as could be ascertained, was the drug exhibited without its being followed by an alleviation of the symptoms. In my later experience I have met with a few cases in which this cannot be said to be true. On the other hand, we must take into consideration the extreme difficulty of obtaining data which are at all reliable in dispensary practice, a feature in which it is so immeasurably less satisfactory than that of the hospital. Possibly, one reason why the chloral may not have seemed quite so efficient as before may be the different type of pertussis which has prevailed during the epidemic of the past winter and spring, in this city. According to my own observation, the disease has been of much greater severity than during that of last year. I have noticed more frequently the occurrence of epistaxis, obstinate vomiting, and the puffiness of the face and congested conjunctiva so characteristic of the graver form of the disease. It affords me pleasure to state, however, that I have never lost a case while pursuing the chloral-treatment; and it may be that some of the cases which seemed very little affected by the remedy might have been even more severe had the disease not been, in a measure, held in check by it. Since my other paper appeared I have seen the report of Dr. Karl Lorey's cases, and fully agree to the propositions which he has based upon the result of his observations, viz., that chloral is well tolerated by children suffering from pertussis, and does not give rise to any kind of disagreeable result; that in the course of a few days the severity and frequency of the paroxysms are greatly diminished; that the patients, during the night, are almost free from disturbance from paroxysms of coughing, and, after an attack, when one does occur, the child rapidly goes to sleep again; and, finally, that the duration of the convulsive stage is generally remarkably short. I cannot, consequently, concur in the opinion of Ferand and Walter Ridger, according to whose observations chloral seems to act only as a palliative, and has no effect whatever upon the course or duration of the disease. During the last few months my friends Drs. T. D. Davis, of Dayton, Ohio, and B. F. Dawson, of this city, have published the reports of a number of cases of pertussis cured in a remarkably short time, in the one instance by the use of the fluid extract of *castanea vesca*, at the suggestion of Dr. John S. Parry, of Philadelphia, and in the other by the sulphate of quinia, in accordance with the views of

Prof. Binz. Personally, I have had no experience with castanea, but I had the opportunity of seeing some of the cases which Dr. Dawson treated with quinine, and wish to bear my testimony to the very great efficiency of the remedy, as employed by him. With three such excellent agents as castanea, quinine, and chloral, at our service, it seems to me that pertussis ought no longer to be such a formidable adversary as it has hitherto been generally considered; for, if one fails, we have the others to fall back upon. The first four cases which I shall detail are incomplete (as the parents of the children failed to continue their attendance at the dispensary), and ought not, perhaps, on that account, to be given; but I have thought they might prove interesting as showing the immediate effects of the remedy in different cases:

Case I.—*May* 1, 1873.—Catherine M., aged three years and eight months. Lives in the house with a child who has had whooping-cough for several weeks. Cough commenced two weeks ago, and began to grow paroxysmal one week ago; since which time it is becoming more severe every day. Whooped, for the first time, the day before yesterday. The spells are extremely violent now, coming on every hour through the day, and several times at night, and the child vomits a great deal. Has the characteristic face of pertussis. Ordered three and three-quarter grains chloral every three hours.

8th.—The medicine gave out several days ago. While it lasted she whooped very little; but the paroxysms have again become severe. Ordered four grains chloral every three hours.

12th.—Does not seem any better. The disease appears to have obtained complete mastery of her system. Paroxysms of extreme violence and frequency. The child being quite weak, ordered a little brandy, and also increased the dose of chloral to five grains.

15th.—Marked improvement in every way. The patient looks a great deal better. Paroxysms not nearly so frequent. Scarcely ever occur, except when brought on by a fit of anger or crying. Sleeps much better at night. Though the remedy was not given as often as directed, it seems to have produced excellent results. Ordered the same continued. The patient was not brought back to the dispensary again.

Case II.—*February* 26*th.*—Mary K., aged three months: bottle-fed. Commenced coughing three weeks ago. Has whooped for the last four days. Terrific paroxysms now, causing the child to grow black in the face. Ordered half-grain chloral every three hours.

28*th.*—Does not have such severe paroxysms. Much easier since the day she commenced taking the medicine. Increased dose to one grain.

March 3*d.*—The mother quite delighted. Thought the child almost well up to last night. Far better in every way. Slept well and took a great deal more nourishment. Last night the paroxysm returned with considerable severity, the medicine having given out some time before. Ordered the same continued. Patient did not return.

Case III.—*February* 26*th.*—Margaret K., aged two and a half years. Commenced to cough three weeks ago, and to whoop two weeks ago. Is getting worse all the time, and vomits a great deal. Ordered two grains chloral every three hours.

28*th.*—Still coughs, but not nearly so often, nor does she whoop so much. Increased dose to two and a half grains.

March 3*d.*—Coughs about the same, but whoops much less frequently. Increased dose to three grains. Did not return.

Case IV.—*March* 15*th.*—Mary E., aged three years and eight months. Cough commenced the second week in February, and became paroxysmal two weeks after. Now whoops about six times during the day, and oftener at night. Ordered three grains chloral.

March 18*th.*—Much better in every way. Appetite, which before was poor, is excellent. Has whooped only once or twice a day, and two or three times at night. Ordered the same continued. Did not return.

The next case was a very obstinate one (which I think due chiefly to the severe bronchitis by which it was complicated), but, from the effects of the remedy noticed, I think the result might have been much more satisfactory had it been persisted in.

Case V.—*March* 14*th.*—John D., aged five years. Has had a cough for nearly a month past. Does not whoop, but has never had pertussis. Found severe bronchitis existing, and ordered a mixture containing the syrups of squill and senega, and paregoric.

17th.—Since he was here the cough has become paroxysmal. Coughs very frequently, whooping three or four times through the day, and every hour at night. "Has a great kink," and gets black in the face during the paroxysm. Ordered five grains chloral every three hours.

19th.—Whoops only once or twice a day now, and not nearly so often at night as before. Still coughs considerably, and has the physiognomy of severe pertussis. His eyes are quite watery, and last night he had an attack of epistaxis. Increased the chloral to seven and a half grains.

21st.—Does not whoop at all, but the cough is still troublesome. The boy sleeps a good deal, but does not suffer the slightest inconvenience from the large doses of chloral. Ordered the same continued.

24th.—Remains about the same. Does not whoop, but still coughs. Vomits occasionally. Ordered the same continued.

26th.—Cough still troublesome, especially at night. Some vomiting and occasional epistaxis. Whooped three times last night, the first time since he first began taking the chloral. Increased the dose to ten grains.

28th.—Coughs still, but sleeps more. No bad effects from the chloral. When given at night it seems to control the cough at once. Has whooped only once since he was here. Ordered the same continued. I learned afterward that the mother became discouraged, and concluded to let the disease run its course, which it did in somewhat more than two months, the paroxysms and whooping returning again with increased violence. At the end of that time I saw the boy, and he was much reduced, but is now rapidly improving on the use of cod-liver oil and iodide of iron.

The next three cases were in the same family, and the effect of the remedy and of its discontinuance is well shown in them all.

CASE VI.—*February 12th.*—Thomas G., aged six years. Cough of five weeks' duration. Began whooping two weeks ago. Has severe paroxysms and spits up blood. Ordered three grains chloral every three hours.

19th.—Though the medicine was not given at night, there was marked improvement up to the time it gave out (two days ago). Since then has grown much worse again. "Had a terrible time last night." Bloody expectoration again recurred. Ordered four grains chloral.

24th.—A great deal better in every way. Does not spit up blood now. Ordered the same continued.

March 3d.—Was wonderfully better while the medicine lasted. It gave out some days ago, as the mother neglected to come to the dispensary. Has commenced spitting blood again, and whoops a great deal now. Ordered the same continued.

CASE VII.—*February 19th.*—John G., aged three years. Has had a cough for two weeks, but is just commencing to whoop. Ordered two grains chloral every three hours.

24th.—Cough the same. Spits up blood now. Increased the dose of chloral to two and a half grains.

March 3d.—There was great improvement after he began the medicine the last time, and the bloody expectoration ceased at once; but, like his brother, he became worse again as soon as the supply gave out.

CASE VIII.—*February 12th.*—James G., aged three and a half months. Cough for nearly two weeks. Has just reached paroxysmal stage. The mother says: "Baby has a dreadful kink, and almost chokes to death when a spell comes on." The child so ill that she sent for me to come to the house. Ordered three-quarters grain chloral every three hours.

19th.—After he commenced taking the medicine grew rapidly better, scarcely whooping at all. Paroxysms much less frequent and severe. The medicine gave out two days ago, and since then the child is worse again. Ordered the same continued.

24th.—Wonderfully improved. Ordered the same continued.

March 3d.—Remained a great deal better until medicine gave out, several days since. Then began to grow worse again, and now coughs a great deal. The mother says she can plainly see the difference in all the children when taking and when not taking the remedy, and thinks its good effects are very marked. Ordered one grain chloral every three hours. These three children continued to take the chloral until the quantities prescribed on the 3d of March were exhausted, when the violence of the disease seemed spent, and the mother did not think it worth while to come back for any more. Not long afterward I ascertained that they were all quite well.

CASE IX.—*April 3d.*—Sophie M., aged two and a half years. Has whooped for five or six days. Coughs frequently, and vomits sometimes. Ordered two and a half grains chloral every three hours.

5th.—Does not whoop at all. Slight cough, only noticeable when she is excited or angry. Ordered the same continued. In this case the child made a perfect recovery promptly, and it was unnecessary to give any more of the chloral. Lest it should be doubted that it was a *bona-fide* case of pertussis, I will state that the little ulcer about the phrenum linguæ, which is by many regarded as proof positive of the affection, was well marked in this patient.

CASE X.—*May 19th.*—Mary B., aged ten months. Has coughed for nearly two weeks, and commenced to whoop the day before yesterday. Up to that time the cough had been growing more and more spasmodic. Now there are about six paroxysms during the day. They are more frequent at night, as well as more severe. A well-marked case, the child whooping almost every time she coughs, and vomiting frequently. Ordered one grain chloral.

21st.—Does not seem any better, except that she does not vomit any more. Increased the dose of chloral to one and a half grain.

23d.—The paroxysms began to diminish as soon as she commenced taking the last medicine. Did not have a single one after the fourth dose. Still has a slight cough, which is so loose and easy as not to trouble her in the least. Discontinued the remedy.

June 1st.—The child is perfectly well.

The two following cases are narrated for the purpose of showing the abortive effect of the drug. They are the only ones in which I have used it before the commencement of the paroxysmal stage, and, though they are sufficiently remarkable, I am, of course, aware that a positive opinion should not be based on such meagre data.

Cases XI. and XII.—*May 19th.*—Edward and Arthur B., aged respectively five and four years, and brothers of Mary B. (the preceding case), living in the same room with her. Edward has a very severe cough, which began on the 16th, while Arthur is just commencing to cough. Neither has ever had pertussis. Ordered four grains chloral every three hours to each.

21st.—Very marked improvement. Edward coughs only once or twice a day, and the cough is not half so severe as before. Arthur scarcely ever coughs at all.

May 23d.—Both boys entirely well.

June 1st.—Have had no return of the cough whatever.

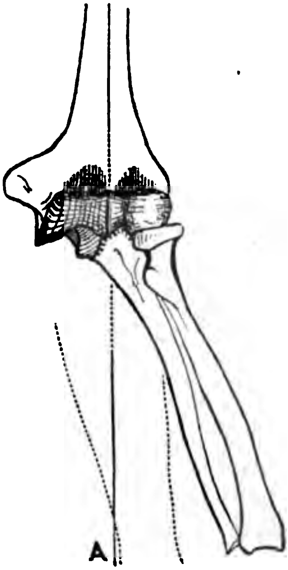
Art. V.—*Incomplete Dislocation of Ulna and Radius outward.* By A. S. Hudson, M. D., Oakland, California.

In a second chapter of "A New Observation on the Luxated Elbow" (*Pacific Medical and Surgical Journal*), I denied the existence of "incomplete" dislocation of the joint. Subsequent study and observation have led me to change my view upon it, and accept that fact as a verity. But there is only *one partial* displacement of the elbow I can make out, and that one undescribed in surgical literature within my reach, and unknown to the profession within my knowledge. It is not described in the works of Gross, Holmes, Hamilton, T. and D. Erichsen, Chelius, Gant, Smith, Ferguson, Symes, and others.

Demonstrated on the skeleton it is simply this: The coronoid process of the ulna is driven over or pulled over the outer margin of the trochlea, and lodged in the groove which a portion of the head of the radius naturally occupies. The distance the coronoid travels, laterally, is a quarter or scant half inch. The upper portion of the greater sigmoid cavity retains its place in the trochlea, while the ridge of that cavity bestrides the ridge of the outer trochleal margin.

The head of the radius is but partially crowded out of its articular place on the humerus (*see* Fig. 1). The arm can be flexed but a little past the right angle. The forearm is deflected outward in excess of its normal inclination. It was my esteemed privilege to announce the above to the members of the San Francisco Medical Society, assembled April 9, 1872.

Fig. 1.



Soon after the demonstration of this lesion on the dead subject, a case presented in my office combined with condyloid fracture. S. J. Hall entered, called my attention to himself, and laid bare an example of ancient unreduced elbow. He said, "when between two and three years of age, he fell from a table to the floor, and split the bone in the joint." Reduction failed, or was not attempted. The member now shows that there has been fracture of the outer condyle of the humerus, and consequent displacement of the fragment a little upward and forward. Pronation and supination are unimpaired. The head of the radius seems to maintain its junction with the displaced condyle, but is separated from the ulna nearly half an inch. The olecranon is in place, but the coronoid process has left the trochlea, and moved over to the original articular precinct of the head of the radius. Observing the front aspect of the arm extended, the supinated forearm is deflected outward four inches from its proper line at the wrist (A, Fig. 1). He can flex the arm only a little past the right angle, but cannot touch the shoulder with the fingers within a distance of half a foot or more, and it stops short of full extension. This last feature is probably due to the displaced condyle, and the contiguous head of radius.

A few weeks later another case presented, without history. Mr. Hazeltine, aged nearly fifty years, says he has no knowledge of having injured his elbow. His left lower arm is deflected outward over five inches from its proper line, A. Flexion is arrested with the elbow at a right angle.

These limbs are every way useful, though less developed, and each is one inch shorter, and less strong than its fellow. The deformity is wholly unnoticed, except when the arms are laid bare of clothing.

The above study refreshes my memory and brings to mind several cases in practice of years past, the precise character of which was then a profound uncertainty; I now recall them as corresponding with this partial dislocation of ulna and radius outward, in history, appearance, and result.

The short distance the bone travels, and the easy inclined plane to surmount, are considerations that lead to the belief that the accident might easily and frequently occur among children. It is to be borne in mind that the outer trochleal margin is prominent and sharply defined in the child, but becomes much effaced in the adult or aged. Hence we conclude that the accident in question can scarcely occur except in childhood and youth.

The Diagnosis rests on *two symptoms:* 1. Succeeding a fall or injury, there is noticed incomplete flexion of the arm; its movement being painfully arrested when bent a little past the right angle. 2. Measured with the arm extended, there is exalted outward deflection of the forearm from its proper position on or near the vertical line A.

Treatment.—The indications for relief are one of three movements, or the three combined: 1. Extension. 2. Movement of forearm backward; and 3. Inward. Thus force applied by extension, or bending the arm backward and inward at the elbow, "in the direction opposite to that of the displaced bones"—the olcranon being the fixed point of the lever—fulfills the end in view.

Prof. Hamilton describes a dislocation of the ulna and radius outward, which he denominates "incomplete." But there are terms of essential difference between his and mine. In his description the olecranon process is driven *half an inch outside* of its fossa, and lodges on or behind the outer condyle of the humerus, leaving the "fossa itself to be plainly felt;"

while in mine the *olecranon is in place and not behind the external condyle,* but the coronoid and head of radius are driven outward a quarter of an inch, and the olecranon fossa is *not* to be "plainly felt." His does not have the symptom of *outward deflection* of the lower arm; mine does. In his cases the two bones, with their articular surfaces, are wholly severed; mine are partially severed. His does not mention what part or portion of articular face remains in contact, in order to constitute incomplete luxation; mine notes both kind and degree.

Query: Does this half-retained and half-lost articular relation apply to any other ulnar displacement? If not, then the above becomes the only form of incomplete elbow luxation to be met with.

ART. VI.—*Diagnosis of Oxalate of Lime in Amorphous Deposits.* By DAVID STEWART, M. D., Port Penn, Del.

THE late Dr. Thomas F. Dale, of Alleghany, sent me a few chalky concretions which he discovered cropping out on the neck of a woman. They dissolved in muriatic acid (H. Cl.), without effervescence, and crystallized therefrom as oxalate of lime on a watch-glass placed in a saucer containing a few drops of ammonia, and covered with a tumbler or beaker-glass.

As triple phosphates behave in the same way, and do not effervesce with H. Cl., the microscope was necessary to distinguish the crystalline form; nevertheless, their diagnosis could be made by acetic acid, which dissolves phosphates, but does not dissolve oxalate of lime. The beautiful octohedra and prisms which gradually form in urine from an acid solution, by the *gradual* formation of ammonia, during decomposition, suggested to me the above expedient to secure *regular* crystals; whereas the more rapid addition of ammonia, as usual, precipitates the nuclei, or feather, or stellar crystals, which I suppose gradually fill up, forming prisms; while oxalate of lime usually precipitates as an amorphous powder.

Clinical Records from Private and Hospital Practice.

I.—*Case of Ruptured Uterus.*[1] By S. C. Thornton, M. D., Moorestown, N. J.

A table, giving the comparative number of some of the difficulties and irregularities that occurred in the Eastern District of the Royal Maternity Charity of London, during a period of eight years, shows that there were 19,430 obstetric cases of these kinds.

Of this number five were of ruptured uterus and vagina, or one to about four thousand.

At another period, at the same place, out of 35,743 deliveries of all kinds, nine were accompanied with ruptured uterus or vagina.

The same relative proportion holds out in this as in the preceding one. All the before-mentioned cases of rupture were fatal.

In two years there were 5,242 deliveries, and four cases of ruptured uterus and vagina; 7,878 deliveries in the next three years, and no case of ruptured uterus and vagina.

But, in eight years, the average number of cases of ruptured uterus and vagina was, as before stated, one to four thousand. Moreau states: "Being sent for to see a woman who had been in labor for twenty-four hours, we found her in a frightful condition, with tympanitic abdomen, frequent pulse, and hurried respiration. The thighs of the child had been fractured, its extraction being impossible, as we were told, on account of the umbilical cord being between the limbs. After having ascertained that this pretended cord was only a loop of small intestine, we proceeded to the delivery, which was soon followed by death. It is probable that, in applying the forceps, the *cul-de-sac* of the vagina had been ruptured, and the fœtus had passed partly or wholly into the abdomen, and that, in bringing down the fœtus, a loop of intestine had been permitted to slip between the lower extremities."

I have quoted this case from Moreau's large work, "Practical Midwifery." Although he does not state that the cord appeared externally, this is the only case I have found in the various works on obstetrics that at all approximates the unfortunate one I attended.

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[1] Read before the District Medical Society for the County of Burlington, New Jersey.

February 28, 1873, 10 P. M.—Thomas Hare, of Fairview, four miles from Moorestown, requested me to attend his wife in parturition. Each of her nine parturitions had been of short duration; and the one previous to the last was over before she had time to obtain the assistance of a female neighbor. Believing that this, her last one, would be as quickly and safely finished as the rest, the fatigued state of myself and horses, and the condition of the roads, all induced me to decline going. I advised him to get a neighboring midwife; or, if he must have a physician, to get some other one.

March 1st, 4½ A. M., he came again, and to gratify his importunate request I visited her, arriving at his house at 5½ A. M. Two German midwives were in attendance all night. The parturient was healthy, and forty years old. The forenoon of the 28th she spent in riding. In the evening labor commenced. A German, the principal operator, plying his vocation under the colors of the mountebank Hahnemann, had been brought from Delanco, which is three miles from Fairview, and seven from Moorestown. After three hours of worse than useless efforts, he was requested to desist, and await my arrival. The reasons he gave for not being willing to wait were both absurd and false—i. e., it was illegal for him to practise in another township; the obligation he would be under of paying me ten dollars; and the necessity for instrumental interference—the instruments for which he did not have, etc. The true reasons, however, are easily surmised. And he made his exit. Galanthis had not been here, for I soon found that the evil genius Lucina sat before her door.

The left arm blue and cold, a fold of the cord as long, and both as far below the vulva as the impacted shoulder would permit, demonstrated what was the accoucheur's duty. In this condition the Delanco tragedian, with infinitesimal ideas, found her and left her; and he too was in his "sixth age," as Jacques, in his reply to the senior duke, has it. A quart or more of blood lay between her thighs; and around the child's feet, *in utero*, it was also coagulated. This induced the more haste for version, for I at first suspected the placenta was detached.

As she had no pain, I at once gave a fluid-drachm of ext. sec. cor., and immediately commenced version. Contrary to my experience in such cases, the version was easily made, and the delivery quickly accomplished. As the child was dead, and the mother still without pain, I left the child's face lying in the hollow of the sacrum, to await contraction of the uterus.

In causing this contraction I failed. The child's body was carried over the mother's belly, to make the face sweep the sacrum. The child was large and well formed. The placenta was removed by slight traction. And now comes the memorable and sickening scene.

Immediately following the placenta, came down, detached from the mesentery, several feet of her ileum. Shocked and confounded, I was at once reminded of the atrocious eviscerations of the human subject, practised by Herophilus and Erasistratus, and of the persecutions of the middle ages. Certainly nothing in history, since the fifteenth century, have I read equal to it. The vagina was untorn; but the uterus was completely rent. Commencing near the neck on the right side, the fissure extended as far as the top of the womb—but not on the left side, where the child's feet lay. At the fundus the distance between the edges was equal to the width of the first three fingers of my right hand; when in apposition, two and a half inches.

I could not make the intestine remain above the uterus. It would relapse into the uterus, and remain protruding from the vagina and lying on the bed. As I suspected, no euthanasy was in store for her: an opiate was given; and herself and family informed of the exact nature of the horrible case, and the certainty of approaching death. At 6½ A. M., one hour from the time of my arrival, I left.

When I saw her at first she was pale; nothing else in her countenance was peculiar. Her pulse was but slightly affected, and the only pain was during the prolapsus of the ileum; at this time she complained of a "terrible cramp in the stomach."

2 P. M.—I saw the case with Dr. Stroud. More folds of the intestine were prolapsed. She complains of pains in the upper parts of her thorax, and has a wonderful stoicism.

Another examination of the uterus found no change in its walls, which were, I suppose, an inch in thickness, and the breach of the same width as before stated.

March 2d, 2 P. M.—The contents of the stomach are affected with the "coffee-ground matter." Pulse more frequent than heretofore. The protruding intestine is black, apparently inflated to its utmost, and of offensive odor. These large coils, lying between the thighs of the living subject to whom they belonged, presented the most repulsive object I have witnessed. But, as she lay in bed, no one would suspect, from her symptoms, or *tout ensemble*, that such a horrible condition was hers.

March 3d.—Intestine sloughed off, woman sinking, and died at 3 P. M. Neither money nor moral suasion could induce an autopsy. The *ante-mortem* examination was the more thorough, for fear the *post-mortem* would not be allowed.

Ramsbotham states that if an extensive rent be formed at once, the probability is that labor-pains will be instantly suspended. The women assured me her travail had been very hard while the charlatan from Delanco was with her; and at 3 A. M., during a severe uterine contraction, one of them "heard the womb rip"—of this she was positive. Be that as it may, from that time the pains ceased. The parturient could not tell when it occurred.

Dewees and Moreau say this accident cannot be predicted. It can be known at the moment of its taking place by a crepitus perceptible to the woman, and sometimes loud enough to be heard by the assistants. Ramsbotham was never present when a rupture occurred, and therefore he cannot testify to its audibleness.

That the uterus would have ripped, even had she been properly attended, is by no means as probable as that it gave way because she was not properly attended.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section of Obstetrics and Diseases of Women and Children.

Stated Meeting, February 17, 1873.

DR. JOHN G. SEWALL, *Chairman*, presiding. Reported by DR. CHARLES A. LEALE, *Secretary*.

NECROSIS OF THE LOWER JAW.

DR. A. C. POST exhibited a bone removed, in consequence of necrosis of the lower jaw, from a girl aged seven years, who was brought to his clinic, January 16, 1873, with an extensive inflammatory swelling involving nearly the whole of the left side of the face, with a sinus behind the ramus of the jaw. On opening the mouth, ulceration of the gum was observed, exposing dead bone. The swelling commenced in July, 1872, at which time a tooth was extracted. The patient had not taken mercury, nor had she been exposed to the fumes of phosphorus. There were no indications of a scrofulous diathesis. The cause of the disease was quite obscure. Dr. Post made no external incision, but introduced within the mouth a chiropodist's forceps, and, seizing the dead portion of bone with a firm grasp, twisted it from its bed, applying a considerable degree of force in its extraction. On examining the specimen, he found that it included the entire left ramus of the jaw, and the body of the bone as far as the space between the anterior and posterior bicuspid teeth. He directed as a mouth-wash liquor sodæ chlorinat., diluted with eight parts of water.

January 23d.—The patient was brought again to the clinic; the inflammatory swelling had in a great measure subsided, and there was found to be a firm rim of bone corresponding with the ramus and the base of the jaw. In reply to a question, Dr. Post stated that, by means of an artificial plate with teeth, the deformity could very easily be overcome.

VASCULAR TUMORS OF THE MEATUS URINARIUS.

Dr. Alfred Underhill stated that he had recently attended a lady, aged seventy-nine years, who, for a long time, had been terribly annoyed by an intense burning pain in passing urine. On examining, he found three red elevations with broad bases, resembling small nævi. When touched they became exceedingly painful, and seemed to him the cause of all pain. He entirely removed them, and, at subsequent visits, found that the cure had been complete.

Dr. Sewall remarked that he had met with a similar case also in an old lady, where, in destroying the growth, he entirely relieved the patient from that most distressing malady, viz., painful micturition.

METRO-PERITONITIS.

Dr. Lewis Smith stated that, during the past two months, there had existed an extensive epidemic of erysipelas and metro-peritonitis in the Twenty-second Ward. He had seen three women die from the latter cause—one patient of his own, and two where the women had been attended by midwives.

Dr. Post thought that a physician attending cases of erysipelas should be very careful how he approaches a woman during childbirth, as it has so often been known to cause metro-peritonitis, and, in illustration, cited the greater success noticed when the house-physician attended all cases of birth over that when the women were attended by the house-surgeon at the New York Hospital.

SECONDARY HÆMORRHAGE, TEN DAYS AFTER DELIVERY, FROM SEVERE EXERCISE.

Dr. John P. Garrish mentioned, although he had seen several cases of profuse secondary hæmorrhage, that none had proved fatal; that recently he attended a woman with her second child, labor very easy, and slight hæmorrhage. On the eighth day sat up in a chair, also on the ninth day for two hours. On the tenth day commenced to sweep the room, when profuse hæmorrhage occurred. On his arrival she was nearly pulseless, still every fifteen or twenty minutes the hæmorrhage would recur. He gave ergot, and applied ice over uterus and in vagina, without checking the flow. He then passed a piece of alum, about the size of a pigeon's-egg, up to the os uteri, and applied a tampon. Her urine was drawn off by catheter. On the eighth day removed the tampon, but, as hæmorrhage recurred on the tenth day, replaced it, allowing it to remain for three days, after which it was removed. She soon entirely recovered.

TUBERCULAR MENINGITIS.

Dr. Lewis Smith related the following history of a case of tubercular meningitis, the specimens from which were presented at a former meeting. The history was obtained from Dr. Beckwith, the resident-physician of the Nursery and Child's Hospital, where the patient was treated:

A. S., female, eleven months old, had protracted enterocolitis during the summer months, from the effect of which she never fully recovered. She remained feeble and somewhat emaciated, but attention was not particularly directed to her till December 9th, when unmistakable symptoms were observed indicating cerebral disease. These were stupor, sluggish and slightly dilated pupils, constipation, vomiting, which had occurred at intervals during the four or five preceding days, and pallor, with occasional flushing of the features.

From December 10th to the 13th, when death occurred, the following additional symptoms were recorded: Slight cough, with a few moist *râles* in lungs, dry surface, a puriform collection between the eyelids, sighing, and intermittent respiration, urine high-colored, and passed in quantity, and in the last hours of life stertorous respiration, and slight spasms of the muscles of the extremities. The pulse, respiration, and temperature, were as follows:

		Pulse.	Respiration.	Temperature.
December 10th	Morning,	140		92½°
	Evening,	192		102°
December 11th	Morning,	140		100°
	Evening,	172		100°
December 12th	Morning,	160	18	99°
	Evening,	152	72	103°
December 13th	Morning,		80	104°
	Evening,		80	103°

On December 12th, Dr. Eno made an ophthalmoscopic examination of the eyes, and could discover no change whatever in the retina on either side.

Autopsy.—Cranial sinuses distended with blood, and containing large, soft, and dark clots; vessels of meninges engorged with blood; about one and a half ounce of nearly transparent liquid escaped from the cranial cavity, a part of it flowing from the ventricles; the base of the brain appeared normal, exhibiting neither tubercles nor fibrinous exudation. Upon the external surface of the left cerebral hemisphere was a small amount of fibrin, along the course of the vessels, and embedded in it were small, round tubercles, some transparent and others opaque; upon the external surface of the left hemisphere was also a slight fibrinous exudation, with a few small tubercles, and in the right Sylvian fissure was also a small cluster of tubercles without inflammatory lesions; the floor of the lateral ventricles was apparently normal, but their walls were softened to the depth of two or three lines.

Mucous membrane of the trachea and bronchial tubes thickened and quite vascular (tracheo-bronchitis); bronchial and mesenteric glands moderately enlarged and cheesy, but not softened; small, disseminated tubercles in both lungs; several tubercles, also small, under the capsule of the spleen, and a few quite minute in the liver; no tubercles in stomach, intestines, or kidneys.

Remarks.—Tuberculosis and the meningitis resulting from it are not infrequent in New York among the poorer classes, and physicians of this city are therefore familiar with them, but there are points of interest in this case, which seem to justify my relating it to the Section. Tuberculosis occurs most frequently between the ages of six months and three years. If it occur previously to that age, there is usually a strong hereditary predisposition to it. Thus in several instances, when the father or mother had this disease, I have known the child begin to cough when a few days or weeks old, and die of tuberculosis before the affected parent. If tuberculosis do not commence till after the age of six months, there may or may not be an hereditary tendency to it—often there is—but this disease rarely occurs at that age without some efficient anti-hygienic condition, to which its occurrence is mainly or at least largely due. In the case which I have related, as in many others, this condition was protracted entero-colitis. The child had been wasted and weakened by the diarrhœa of the summer months, and had remained feeble.

In this case, as is usual in the acute miliary tuberculosis of infants, the tubercles were widely disseminated, occurring in the meninges, lungs, liver, and spleen, none of them far advanced, none softened, and the bronchial and mesenteric glands were cheesy. In infants, therefore, the constitutional or general nature of this disease is more apparent than in adults, in whom tubercles are much less disseminated, and are often developed in the lungs only. In this case, as in many others of infantile tuberculosis, there seemed to be a nearly simultaneous development of tubercles in the organs which were involved, but commonly the largest cheesy nodules are in the lungs, bronchial and mesenteric glands.

Congestion of the meningeal veins and cranial sinuses in the tuberculosis of children is in some instances due to the pressure of enlarged bronchial glands on the vessels within the thorax, which return blood from the brain. In the above case there did not seem to be sufficient enlargement of these glands to produce impediment to the return circulation, and the congestion and formation of clots in the intra-cranial venous system were probably due to the feebleness of the circulation from the exhausted state of the child.

The meningitis, as has been seen, was slight, apparently inadequate in itself to produce such grave cerebral symptoms and death. Was not the result largely due to the direct effect of the tubercles? For meningeal tubercles, developed as they are on the walls of the arterioles, may, as they enlarge, obstruct the circulation in these vessels, and, even if they occur in clusters, that of the accompanying veins, so that those who are most familiar with the lesions of meningeal tubercles agree that they occasionally give rise to transudation of serum, and grave cerebral symptoms, without the occurrence of inflammation.

Another point of interest in this case was the seat of the meningitis. The common location of meningeal tubercles is

in the fissures of Sylvius, and along the base of the brain, and tubercular meningitis is therefore, as a rule, basilar. Indeed, some writers say that all basilar meningitis is tubercular, but I would except the meningitis which results from deep-seated otitis, and caries of the petrous portion of the temporal bone, in which the inflammation may extend along the meninges at the base. It is especially in basilar meningitis that the ophthalmoscope is useful as a means of diagnosis; and that the retina in this patient remained normal was of course due to the fact that the base of the brain, and the meninges covering it, were intact.

ICTERUS NEONATORUM.

Dr. A. S. Church gave the following history, where, out of seventeen children, only two lived beyond the ninth day:

Mrs. C. became a patient of mine in the year 1865, while pregnant with her ninth child. The following brief history of herself was obtained at the time: Age, thirty-six years; was married at seventeen. Has had eight children at full term, and three premature births. Has enjoyed good health, except an occasional attack of chills-and-fever. Her first child was born healthy, and is still alive. Every subsequent child has died shortly after birth or within nine days, and all who have lived forty-eight hours have had jaundice. The parents seemed willing and desirous of furnishing every information in their power, but no history of syphilis or other constitutional or hereditary disease could be obtained. She completed her full period, and was delivered in June, of a small but healthy-looking child, which commenced moaning about two hours after birth, and died in about eight hours. Her tenth child commenced moaning a few hours after birth; jaundice became very marked on the third day, and it died on the fifth with decided enlargement and tenderness of the liver, and deep-yellow color of the skin, tongue, gums, and conjunctivæ. Her eleventh child was born on the 24th of September, 1867. I will give in detail a history of this case, as it was a fair representative of her subsequent children. The child was well developed and apparently healthy, weighing about eight pounds. Shortly after birth urine was voided and meconium passed the bowels. About four hours after birth the child commenced moaning without any apparent cause. On the following morning (25th) the moaning still continued, and marked tenderness of the liver was recognized, with some enlargement.

26th.—Vomiting has become frequent, and the pain more severe; tenderness over the liver more marked, and swelling increased. The skin, conjunctivæ, tongue, and gums, yellow; urine deep yellow, alvine evacuations of a dirty-brown color.

27th.—An opiate has relieved the pain and vomiting somewhat, otherwise there is no change.

28th.—The pain has returned, size of liver increased, every portion of the child is of a deep-yellow color, the clothing is deeply stained, the evacuations are clay-colored, food is rejected by the stomach, emaciation is marked. These symptoms continued without much variation until the ninth day, when death took place.

Her twelfth child was born March 24, 1869. Its history in no way differed from that of the eleventh, except that on the ninth day hæmorrhage from the umbilicus took place, and the child died from loss of blood in a few hours.

January 25, 1870.—She was delivered of twins, both small and feeble, one of which lived only a few minutes, the other lived two days and a half. It emaciated rapidly, and on the second day assumed the yellow hue that characterized all of her other children.

December 15, 1870.—She was prematurely delivered at eight months of a still-born child, caused probably by a severe attack of bronchitis.

January 12, 1873.—Her sixteenth child was born, small and feeble. Ecchymosed spots of irregular shape, and small in diameter, appeared on the face, head, and neck, soon after birth, and lasted about twenty-four hours. Jaundice appeared as usual on the second day, accompanied with enlargement of the liver, but with less pain and tenderness than had characterized the other cases. No treatment was recommended, except a dose of castor-oil on the third day. The jaundice commenced to disappear about the twelfth day, and by the twentieth the skin was clear and the evacuations of the bowels natural. The child is now perfectly well.

No *post mortem* was allowed in any of the above-mentioned cases.

The treatment of the tenth child was by soda bicarb. internally, and fomentations externally. The eleventh child was treated by small doses of calomel, without any good results. The twelfth by occasional doses of castor-oil, and an opiate when necessary to relieve pain. The mother, during the last three months of her tenth pregnancy, took mercurials under the belief that important information had been withheld from me, and that syphilis might be the cause of her misfortunes. No good result followed. Potas. chlorat. was largely used during her thirteenth pregnancy, with no better results. The last month of several of her pregnancies has been characterized by severe bronchial disturbance which has not yielded to treatment, but has disappeared soon after delivery.

The placenta, in nearly every instance, has been small, but otherwise apparently healthy.

Bibliographical and Literary Notes.

ART. I.—*Consumption and its Treatment, in all its Forms.* By Dr. CARL BOTH. 8vo, pp. 157. Boston: Alexander Moore, 1873.

THERE are few books which possess the merits of this work. It is seldom we meet with a book filled with insolence and self-conceit, and at the same time almost devoid of a correct pathological fact. In the preface (and in fact throughout the book) we are informed of the author's advancement in scientific knowledge, and the utter ignorance of scientific attainments exhibited by the medical profession in America; and in the Appendix the author complains of the difficulty of getting his views accepted (another evidence of our idiocy) or even published, and of the general behavior of the profession toward him. Dr. Jacobi even advised him "to go into the public quack business." Judging from the tenor of this book, we think the advice was superfluous. "*All* patients suffering from lung-disease" are warned against placing "reliance in the diagnosis of a general practitioner, or so-called family physician, for the simple reason that it is impossible for such physicians to be masters of the subject." We had hitherto labored under the delusion that the physicians of America were quite ready to receive all new anatomical and pathological discoveries of our German brothers as early as the journals could promulgate them.

Had the author been familiar with the views of Max Schultze, Stricker, and Rolett, he might not have made the mistake of calling all cells *membranous sacs*, containing liquid and solid material, and always containing a *nucleus*. Neither is his view of their *growth* in accordance with the latest observations of German authors. We would refer him, for further instruction, to the American edition of Stricker's "Histology." We concede that the want of government support to scientific investigations prevents the practical research in this country which is pursued by the physicians of Germany; but our physicians are certainly not remiss in their duty of endeavoring to acquaint themselves with the latest views of those who do investigate; and yet we fancy there are those in this country who are endeavoring, by individual enterprise, to add what they can to the general fund of scientific knowledge.

The book abounds in statements of new views which lack any particular support, except that they are said to be "the result of a laborious and long-continued study."

The process in respiration and its relation to diseased actions, given by the author, is something of this sort: The elastic tissue forming the walls of the alveoles, during the expiratory act, lies in loose meshes; during inspiration, it is stretched by the air and compressed; the expiratory act allows the serum to exude from the capillaries, filling up the meshes of the elastic tissue; while the inspiratory act forces it back into the vessels, thereby propelling the circulation through the lungs and allowing an interchange of the oxygen and carbonic acid to take place. The upper portion of the lungs is filled with air in a less degree than other portions, consequently the circulation is in a great degree arrested, allowing slight extravasations of blood-cells, which, after undergoing certain changes, constitute tubercles. The more sudden extravasation of blood-cells, from any cause, constitutes *pneumonia*. This escape of blood-corpuscles (which is only from rupture of the capillary walls) is claimed to have been first explained by the author. Half the cases of tuberculosis are due to chronic lobular pneumonitis following the acute. Acute tuberculosis is said to be due to the absorption of pus or septic material. This is difficult of cure, but may be temporarily arrested. Ordinary tuberculosis may always be arrested and cured, if taken sufficiently early. Certain kinds of gymnastic exercises, artificial calcification of the tubercles, and proper attention to the digestion, are "unfailing" remedies.

Some other notions are thrown in incidentally; whooping-cough is due to atelectasis of the lungs, the coughing-fits being a last effort of Nature to effect an entrance of air. It can be cured in from two to four weeks. Also, "It is as unnecessary for a child to die of scarlet fever as it is that it should be blind with cataract." Lemon-juice and gum-arabic are the remedies, together with a hot, moist flannel applied to the abdomen.

We have given, we think, a fair sample of the contents of the work, which is utterly beneath criticism. We are reminded, in reading the author's views of disease and its treatment, of the passage in Macbeth:

> "Fillet of a fenny snake,
> In the caldron boil and bake:
> Eye of newt, and toe of frog,
> Wool of bat, and tongue of dog,
> Adder's fork, and blind-worm's sting,
> Lizard's leg, and owlet's wing,
> For a charm of powerful trouble,
> Like a hell-broth boil and bubble."

ART. II.—*The Diseases of the Stomach. Being the Third Edition of the "Diagnosis and Treatment of the Varieties of Dyspepsia."* By WILSON FOX, M. D., F. R. C. P., F. R. S., etc., etc. Small 8vo, pp. xii.–236. London and New York: Macmillan & Co., 1872.

WE are pleased with the matter of this book as well as the manner in which it is presented. The affections of the stomach are considered from a pathologico-anatomical standpoint, much of the obscurity formerly hanging around "dyspepsia" being thereby cleared up.

Part I., "On the General Symptomatology of the Stomach," comprises fifty-six pages, and affords a very good idea of the import of the varied symptoms witnessed. On page three the following significant sentence occurs: ". . . Excepting, however, those cases where there is direct pigmentary discoloration from jaundice, when other tissues participate in the change, there is no foundation for the common belief that a yellow fur on the tongue has any necessary connection with the hepatic disorder."

Passing to Part II., it is noticed that "Atonic Dyspepsia" and "Neuroses of the Stomach" are separately treated. "Acute Catarrh" embraces cases of acute dyspepsia, and is the essential anatomical condition in cholera infantum, which, we may add, is confirmatory of the identity of the latter with the epidemic cholera of adults. It (catarrh or congestion) is the first step, according to the author, in the (solitary) glandular degeneration and subsequent softening of the mucous membrane. Distinction is drawn between this softening and that due to *post-mortem* change, or to the peculiar condition of the secretions immediately preceding death. Sick-headache is also said to depend upon acute catarrh. In individuals who are subject to repeated attacks, it seems as though the sympathetic nervous system must be at fault: at all events, the mechanism must be through the agency of this system, even if irritation of the stomach causes it.

"Chronic catarrh" is supposed to be the starting-point in the degeneration of the gland-cells of the tubules, giving rise to a condition similar to that found in the inflammatory form of Bright's disease; and is the most frequent source of indigestion.

The mechanism of "ulcer" is explained by the occurrence of hæmorrhagic extravasations interfering with the vitality of the part, enabling the acids of the stomach to dissolve the tissue. Any thing which tends to disorder the local circulation predisposes to extravasation: thus, the chlorotic condition favors it, accounting for the large proportion of cases of ulcer in that class. This is in accordance with the idea of Neftel,[1] who attributes the deafness occurring in chlorotic females to extravasations within the ear. Excess of acid secretion, induced by the use of alcohol, and the ulceration of solitary glands, are other sources of ulceration.

Dr. Fox believes "cancer" to be of constitutional and hereditary origin, although local injuries are admitted to precede the occurrence of a certain proportion of cases. He does not deny the causative relation between ulcer and cancer, as frequent cicatrices found in connection with the existence of cancer indicate previous ulceration. The author inclines to the opinion that colloid cancer is of glandular origin and is related to epitheliomata. Allusion is made to the pathological distinction between scirrhus and "hypertrophy," though the latter is treated at less length than the subject seems to demand, only little more than a page being devoted to its consideration. On page 210 it is stated:

"The causes of this condition (hypertrophy), independently of the observation of Rokitansky, are very obscure, and, from its extreme rarity, the disorder must be considered at present to be one which presents features rather of a pathological than of clinical interest."

We are inclined to the opinion that many of the cases of so-called scirrhus are simply hypertrophy of the walls of the stomach,[2] and, although presenting an equally unfavorable prognosis, its clinical significance is quite as important as its pathological.

The pathological and anatomical conditions in the different affections are usually well described, the lines of distinction being nicely drawn. The differentiation of the obscure affections is well considered, and the treatment recommended is judicious. No space is devoted to the full report of cases, which recommends the work to the busy practitioner. Much of the matter contained in foot-notes would have been more convenient for the reader had it been incorporated in the text. But this is a small fault. The book is presented in good style—the copious references and the two plates (of nineteen figures) adding to its value.

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[1] Brown-Séquard's "Archives," January, 1873.

[2] *Vide* Frey's "Microscope," etc., American edition, p. 431.

ART. III.—*Fourteen Weeks in Human Physiology.* By J. DORMAN STEELE, A. M., Ph. D., F. G. S., late Principal of Elmira Free Academy, Author of the Fourteen Weeks' Series in Philosophy, Chemistry, Geology, Astronomy, etc. New York and Chicago: A. S. Barnes & Co., 1873.

THIS is the fifth of Mr. Steele's series of school-books, called the "Fourteen Weeks' Courses." Whatever may have been the merits of the earlier volumes, the last certainly is not a success, and declares its author to be at once an amateur book-maker, and an immature physiologist. Until lately, he seems to have been a stranger to his subject, and yet he approaches it boldly, with a confidence inspired, no doubt, by his previous excursions in the adjacent fields of chemistry, astronomy, physics, and geology. There are loose or erroneous statements in every phase of the subject treated, from histology to surgical therapeutics. Even anatomical facts are inexactly quoted, as when the intestinal villi and lacteals are made identical. As a matter of course, the drum and drum-membrane are confounded; also the cutis and cuticle. An illustration showing ciliated epithelium is called "a group of cilia;" and the larynx "a small muscular box." The femur is described as "necessarily the strongest" (bone) "in the body, since, at every step, it has to bear the weight of the whole body." And yet, on the next page, the pupil is told, "the tibia bears all the weight of the body." Muscular fibrillæ are said to be composed of a "row of *cells* arranged like a string of beads." We may feel the contraction of the *masseter* muscles "by placing the hand on the temple while we work the jaw. . . . Lumbago is a disease of the muscles of the back, of which, it is supposed, strong swimmers sometimes suddenly drown without apparent cause." On page 26 the nerves and *arteries* are said to "serve as a means of communication between the brain and the rest of the body." On page 94 our author refers to "the foul air which passes through the skin." However wild the anatomy and physiology of the book, perhaps its worst feature is the mock-eloquence which garnishes nearly every chapter. At the head of the chapter on the skin, we read that "it" (the skin) "hides from view the delicate organs within, yet the faintest tint of a thought shines through, while the soul paints upon it the richest and rarest colors." In the section on "absorption," among other gems, we find the following: "The food, potent with force, is now buried in that river of life from which the body springs momentarily afresh." Concerning "assimilation," we learn that "within us is an Almighty Architect, who superintends a thousand builders," and "so, without sound of builder or stroke of hammer, goes up, day by day, the body—the glorious temple of the soul." In the last section of the book we are told that "these" (vital) "powers which have so long time been our servants gather about our dying couch, and their last offices usher us into the new life and the grander possibilities of the world to come." There is much more of this physiological blank prose, but even the amount quoted will suffice for a "fourteen weeks'" pupil. Among the so-called "practical questions" with which each chapter concludes we meet the following: "Can one tickle himself?" "Name some so-called flavors which are really sensations of touch." "Why was the nose placed over the mouth?" "Ought a boot to have a heel-piece?" "Ought chairs to have straight backs?" "Why is a spare bed generally unhealthy?" "Is the Grecian bend a healthy position?" Some of these *healthy* questions are answered in the text, but numbers of them are not, and so foot-notes are appended to the "practical questions" in addition to those freely scattered through the original text. Concerning the treatment of a felon this point is made: "It should be opened so as to prevent the poison collected there from being absorbed and *again* scattered through the system. The physician will *merely* cut through the periosteum and let out the effete matter." Comment is unnecessary. His remarks on dropsy, erysipelas, rheumatism, and diphtheria are almost as instructive as the above to a fourteen-weekly student, but they cannot here be cited. The major part of the quotations we have made are to be found in the first half of the book. Further we cannot go, except to supply one more sample from page 169, where a sentence begins thus: "When paralysis happens in one-half the brain."

The style of composition is too slovenly for a school-book. The use of the inelegant verb "to have to," the application of the verb "ought" to inanimate objects, and the use of "healthy" for healthful, already instanced, are not the only evidences of the faulty style into which an ex-principal of an academy may fall when he writes for his fourteen weeks' constituency.

Among the illustrations used we fail to discover any original ones, but we do find that the plates of Marshall and Huxley, and the beautiful diagrams of Dr. Dalton, have been so freely borrowed that we are inclined to make a pun on *Mr. Steele's* name. These illustrations are used without acknowledgment, although the sources of certain trivial foot-notes are carefully named; but what makes this action especially graceless is the fact that two of the authors just named were already in the field with admirable text-books on elementary physiology.

ART. IV.—I. *An Introduction to the Study of Clinical Medicine; being a Guide to the Investigation of Disease. For the Use of Students.* By OCTAVIUS STURGES, M. D., Cantab., etc. 12mo, pp. 127. Philadelphia: H. C. Lea, 1873.

II. *Clinical Lectures on Various Important Diseases; being a Collection of the Clinical Lectures delivered in the Medical Wards of Mercy Hospital, Chicago.* By NATHAN S. DAVIS, A. M., M. D., etc.; edited by FRANK H. DAVIS, M. D. 12mo, pp. 262. Chicago: J. J. Spalding & Co., 1873.

THE former of the above-named volumes "assumes no more than to point out to students a method . . . of interrogating patients at the bedside." For this purpose it is quite suggestive, and a valuable help to the student as a preliminary study. Had the author, however, made the work a little larger by giving more fully the import of the symptoms in connection with the methods of examination, its usefulness would have been increased.

The "Lectures" of Dr. Davis, as far as they go, are readable and pleasant. This book is as closely devoted to the *treatment* of certain cases as Dr. Sturges's is to their *exami-*

nation; it is simply valuable as giving Prof. Davis's method of treatment, and is by no means an addition to other works on practical medicine, in elucidating the nature or diagnosis of disease.

We are not in accord with the author in all respects as regards treatment; for instance, we regard mercurial alteratives in any stage of pulmonary tuberculosis and diphtheria as highly pernicious. Calomel enters into the composition of many prescriptions in which we think it might be profitably dispensed with. We do not, with the author, think a tobacco-enema a very safe remedy for "relieving dangerous obstruction, produced by irregular contraction of the muscular coat of the intestines," and actual obstructions, occurring from other causes than impaction, would be very unlikely to be relieved by the action of tobacco. The writer recently successfully treated a case of intussusception of the descending colon, in an adult, by the forcible injection of air. Alcoholic stimulants are not recommended in any recorded case. Scarcely a formula is written methodically. A prescription, mentioning several articles, usually contains the name of one article in the nominative case of the Latin, another in the genitive case of the same, and another in English.

The cases are not clearly reported in all instances, the age and sex being frequently omitted. One case of membranous croup is reported, which we are very confident was a severe case of the ordinary inflammatory variety. In describing diphtheria, the frequent sudden termination of the case by the formation of heart-clot is not mentioned.

With the exception of a few faults above mentioned, the practitioner will peruse this little volume with a considerable amount of interest and profit.

ART. V.—*A Hand-book of Medical Electricity.* By HERBERT TIBBITS, M. D., L. R. C. P., London, etc. 8vo, pp. 164. Philadelphia: Lindsay & Blakiston, 1873.

DR. TIBBITS, who is known as an authority upon electricity, has endeavored to write a concise book upon this subject for the general practitioner, embracing only the valuable part of the existing knowledge. It is difficult to condense all that is known upon this subject into a space of less than one hundred and fifty pages (no larger than those of a 12mo volume) of coarse print, with the existing space encroached upon by a profuse exhibition of woodcuts. This work, however, is written in a condensed style, and is well adapted for the practitioner who does not make a specialty of electrical treatment. For one desiring to know all about the principles and the details of application, and having occasion to make daily use of electricity in its varied forms, the more extended treatise of Meyer, or Beard and Rockwell, will be found more satisfactory.

The contained doctrines are for the most part in accordance with those now generally received. The author thinks the *constant* current alone is of use in neuralgia, the faradic only acting as a counter-irritant; in organic infantile paralysis he agrees with Hammond, in opposition to Duchenne and others, in the superior value of the constant current; and is quite an advocate of "Franklinism" in certain cases. The author does not admit the wide range of electricity claimed by some. All the space allotted to electro-surgery is one page on "electrolysis."

ART. VI.—*The Mineral Springs of the United States and Canada, with Analyses and Notes on the Prominent Spas of Europe, and a List of Sea-side Resorts.* By GEO. E. WALTON, M. D., etc., etc. 12mo, pp. xii.–390. New York: D. Appleton & Co., 1873.

NOTWITHSTANDING the lengthened period during which mineral waters have been in use, their employment has not in this country been reduced to any thing like an exact science; the profession have been nearly as much in the dark respecting the application of the several waters to individual complaints as are the non-professional, the consequence being the loss of a great deal of good that might otherwise have been bestowed.

The work under notice will tend to enlighten both the profession and the people upon this question. It not only gives an account of all the springs in the United States and Canada, with their composition, properties, and means of access, sea-side resorts, rules for bathing, the principal European spas, etc., but also devotes a considerable space to therapeutics, throwing much light upon the indications for the kind of water-treatment required in the various *chronic* affections. The descriptions of the diseases, however, are more calculated to benefit the popular than the professional reader. While the views expressed are ordinarily correct, we notice an occasional statement from which we are inclined to dissent: for instance, gout is spoken of as being always caused by high living and hereditary predispositions, and syphilis as not being entirely curable. With some exceptions, it is stated (page 74): "It seems that, however latent the disease" (syphilis), "its manifestation is developed by sulphur-waters; and, as a rule, persons suspected of syphilis, who pursue a course of these waters without any symptoms supervening, may be considered free from the disease."

The scope of the work, as indicated by the title, is fully borne out in the text, being sufficient for all readers. It is written in readable style, and illustrated by maps and woodcuts, and the pages are well filled.

Books and Pamphlets Received.—Hand-book for the Physiological Laboratory. By E. Klein, M. D., Assistant Professor in the Pathological Laboratory of the Brown Institute, London, etc.; J. Burdon-Sanderson, M. D., F. R. S., Professor of Practical Physiology in University College, London; Michael Foster, M. A., M. D., F. R. S., Fellow of, and Prælector of Physiology in, Trinity College, Cambridge; and T. Lauder Brunton, M. D., D. Sc., Lecturer on Materia Medica in the College of St. Bartholomew's Hospital, London. Edited by J. Burdon-Sanderson. In two volumes, with One Hundred and Thirty-three Plates, containing Three Hundred and Fifty-three Illustrations. Vol. I. Text—Vol. II. Plates. Philadelphia: Lindsay & Blakiston, 1873.

Pharmaceutical Lexicon: a Dictionary of Pharmaceutical Science, containing a Concise Explanation of the Various Subjects and Terms of Pharmacy, with Appropriate Selections from the Collateral Sciences. Formulæ for Officinal, Empirical, and Dietetic Preparations, Selected Prescriptions, List of Diseases, Preservation of Dead Bodies, Table of Signs and Abbreviations, Antidotes to Poisons, etc., etc., designed as a Guide for the

Pharmaceutist, Druggist, Physician, etc. By H. V. Sweringen, Member of the American Pharmaceutical Association, etc. Philadelphia: Lindsay & Blakiston, 1873.

Chemistry: General, Medical, and Pharmaceutical, including the Chemistry of the United States Pharmacopœia. A Manual on the General Principles of the Science, and their Applications to Medicine and Pharmacy. By John Attfield, Ph. D., F. R. S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain, etc., etc. Fifth edition, revised from the fourth (English) edition, by the author. Philadelphia: Henry C. Lea, 1873.

The Soldier's Manual of Sanitation and of First Help in Sickness, and when wounded. Adapted for Officers, Non-commissioned Officers, and Privates of the Active Forces, Militia, Yeomanry, and Volunteers for Home and Foreign Service, for Peace and for War. By Deputy Surgeon-General Charles Alexander Gordon, M. D., C. B. London: Baillière, Tindall & Cox, 1873.

Report of the Municipal Hospital, comprising Statistics of 2,877 Cases of Small-pox. By Wm. McWelch, M. D., Physician in Charge. From the Annual Report of the Board of Health of the City of Philadelphia for the Year 1872. Philadelphia: E. C. Markley & Son, 1873. Pp. 81.

De l'Obésité et de son Traitement, par le Docteur L. Vacher, Lauréat de la Faculté de Médecine de Paris, etc., etc. Avec une Conférence sur le Traitement de l'Obésité d'après le Système Banting. Par le Docteur F. de Niemeyer. Paris: Savy, Rue Hautefeuille, 24. 1873.

On the Influence of Age in the Causation of Skin-Disease, as ascertained by the Analysis of Five Thousand Consecutive Cases of Skin-Disease. By Baldmano Squire, M. B., London, Surgeon to the British Hospital for Disease of the Skin. London: J. & A. Churchill, 1873.

Lessons on Hygiene and Surgery from the Franco-Prussian War. By Charles Alexander Gordon, M. D., C. B., Deputy Inspector-General of Hospitals, late on Special Service to the French Hospitals, etc., etc. London: Baillière, Tindall & Cox, 1873.

Clinical Reports from Private Practice. By John Herbert Claiborne, A. M., M. D., one of the Vice-Presidents of the Medical Society of Virginia, late Surgeon in the Confederate Army, etc. Petersburg, Va.: Joseph Van Holt Nash, 1873.

Fractures of the Elbow-Joint. An Essay to which was awarded the Second Prize of the Boylston Medical Society for 1873. By Walter Ela, Second-Year Student, Harvard Medical School, Cambridge. Welch, Biglow & Co., 1873.

Ergot in the Treatment of Nervous Diseases. By Daniel H. Kitchen, M. D., Assistant Physician of the New York State Lunatic Asylum. From the American Journal of Insanity for July, 1873.

The Induction of Sleep and Insensibility to Pain by the Self-Administration of Anæsthetics. By John M. Crombie, M. A., M. D. London: J. & A. Churchill, 1873. Pp. 39.

Contributions to Practical Surgery. By George W. Norris, M. D., Late Surgeon to the Pennsylvania Hospital, etc., etc. Philadelphia: Lindsay & Blakiston, 1873.

Catalogue of the Officers and Students in Cleveland Medical College, and Announcement for Session of 1873–'74. Cleveland, 1873. Pp. 29.

Thirty-first Annual Announcement of Rush Medical College, Chicago, Ill. For the Session 1873–'74. Chicago: Bulletin Printing Co., 1873.

Translations.

The Local Influence of Medicated Hypodermic Injections. (*La Nuova Liguria Medica*, February 20, 1873.)—Prof. De Renzi prefaces the report of his experiments by saying that the discovery of hypodermic medication was due to the desire of physicians to carry the remedy to the point where the disease existed. It was at first supposed that the effect was very considerably localized; by degrees, however, an opposite view begins to prevail, and greater importance is ascribed to the facility and rapidity with which the inoculated substance is absorbed. To determine this point, experiments were very accurately made in three cases of sciatica. A number of converging lines were drawn on the skin over the upper portion of the chief seat of pain. The centre of the radiating lines was just behind the great trochanter. Before and after each injection, which was made in the centre of the seat of pain, the sensibility of the skin was measured with Weber's compasses over each radius, at the periphery, as well as toward the centre. The sensibility of several other portions of the thigh and the leg was measured by the method of weights—sensibility to pressure—and by the compasses before and after the injections. The general results of these examinations, which amounted to several hundred, may be formulated in the following propositions:

1. The cutaneous sensibility, measured by Weber's compasses, is generally increased rather than diminished after subcutaneous injections.

2. Frequently repeating these injections, and each time measuring the sensibility, the latter is, after a few days, often found to be augmented in a considerable degree, and, at the termination of the treatment, is much greater than at the commencement.

Hence we may conclude that the hypodermic medication with the salts of morphia does not exert any direct and local narcotic effect. The augmentation of the sensibility after each injection noticed evidently does not depend on the inoculation, but on the repeated application of the compasses, and on the repeated exercise of the perceptive faculties. Indeed, without making hypodermic injections, but simply examining the sensibility several times, it becomes greater, and the tactile circles are diminished in size.

The Role which the Vehicle should play in Hypodermic Injections. (*Répertoire de Pharmacie*, 1872, No. 2.)—In this article Dr. Constantin Paul speaks first of distilled water, and recalls the fact that the injections of this liquid, made by M. Potain in cases of articular rheumatism, have frequently quieted the pain; that lumbar myosalgia is rapidly cured by them; that they were successfully used in the treatment of hepatic colic, neuralgia, etc. Also, that an injection of water, made in the region where a blister is to be applied, facilitates the action of the latter and suppresses the pain. Finally, Dr. Paul recommends the subcutaneous injection of water in cases where it is necessary to attack the element of *pain*. The quantity of water to be used is from half a gramme to a gramme. Care should be taken to bury the point of the canula in the cellular tissue, and to empty the syringe slowly and without violence.

Papilloma of the Umbilicus.—The removal, by caustic, of a large and deep papilloma of the umbilicus, by Prof. Rizzoli, is noticed in the *Nuova Liguria Medica*, January 20, 1873. Papillomas and cancroids of the umbilicus are quite rare, and their removal by the knife has usually resulted fatally. Rizzoli cites several fatal cases occurring in his own practice.

The patient was a female, fifty-one years of age, of good constitution, having an ulcerated papilloma of the umbilicus. The tumor did not extend beyond the ring. A paste was made of eight grammes of chloride of zinc dissolved in alcohol, and mixed with eight grammes of wheat-flour. The surface of the papilloma was covered with this paste, and charpie and a bandage applied. The pain and inflammation occasioned were not very severe, and after nine days the papilloma was reduced to an eschar, which became detached, leaving a clean, conical wound, with its base presenting externally. The acuminated portion corresponded precisely with the umbilical ring, which remained intact. The wound healed nicely, leaving a depressed cicatrix.

The Influence of Ammonia in Factories where Mercury is employed.—According to M. Meyer, this influence is not only definite, but also very beneficial to the health of the workmen. Having remarked by chance that the penetrating odor of this gas modified the unpleasant and suffocating air of a silvering factory, he has been accustomed, since 1868, to sprinkle the floors of the silvering-shop in Chauny, every evening, with a solution of ammonia.—("Report of the Academy of Sciences," *Séance* of March 10, 1873. *La France Médicale*, March 19, 1873.)

Anti-Neuralgic Snuff of Tobacco and Quinine. (*Revista Clinica Bologna*, March, 1873, and *Lyon Médicale*, May 25, 1873.)—The mixture of tobacco and quinine is made in the following proportions: Citrate of quinine 50 centigr., tobacco, well fermented and irritant, one grain. Dr. Francesco Scriffignano employs this preparation principally in cases of intermittent facial neuralgia. He advises the use of several pinches of the snuff during the accession for three consecutive days. This method of administering quinine is analogous to the hypodermic method. The medicine acts almost directly on the diseased nerve by means of the ethmoidal branch of the nasal filament of the ophthalmic, a branch of the fifth pair. The first access after the use of the remedy is notably much diminished in intensity, the following one is still more so, and, after the third, or at most the fourth day, the pain does not reappear.

Miscellany.

Resolutions on the Death of Dr. S. C. Foster.—At a stated meeting of the New York Academy of Medicine, held June 19, 1873, the following resolutions were unanimously adpted:

Whereas, It has pleased an all-wise Providence to remove by death Dr. Samuel Conant Foster: therefore—

Resolved, That this Academy is called upon to mourn the loss of a Fellow endeared to many by the ties of warm personal friendship, and respected by all who knew him, for his integrity, and for his classical and medical culture.

Resolved, That in his official relations to this Academy; in the essays he has presented; in his connection with Bellevue Hospital and in private practice, he has shown that he cultivated those Hippocratic qualities which, during pupilage, were enjoined upon him at his *alma mater*, Jefferson Medical College, Philadelphia.

Resolved, That though ill health had for a long period caused an isolation which prevented active coöperation with his profession, nevertheless, the spark which early enkindled his medical enthusiasm still burned and was only extinguished by death.

Resolved, That these resolutions be entered on the minutes of the Academy, and also that copies, duly authenticated, be sent to the family of the deceased and printed in the medical journals of this city.

Austin Flint, M. D., *President.*

W. T. White, M. D., *Secretary.*

Appointments, Honors, etc.—Prof. Pancoast has resigned the chair of Anatomy in Jefferson College. The election of his successor is postponed, we believe, until October. Dr. William Thomson has been elected Clinical Lecturer on Diseases of the Eye in the same institution. Prof. Charles L. Ives, of Yale College, has been elected to the chair of Diseases of the Mind and Nervous System, in the Medical Department of the University of the City of New York. Dr. Eugene W. Hilgard has been appointed Professor of Geology, Zoology, and Botany, in the University of Michigan. Dr. Charles F. Bevan has been elected Demonstrator of Anatomy in the Baltimore College of Physicians and Surgeons. M. Hervieux has been elected into the Accouchment Section of the Académie de Médecine by the votes of fifty-one of sixty-eight members present.

Leipsic University.—According to the *Frankfort Journal*, the number of students during the present summer amounts to 2,700, being an increase of 70 upon the winter session. For this last there were 2,650 matriculated students, of whom 759 quitted the university at the end of the session. These have been replaced by 829 new students, matriculated since last April. They are thus distributed: Theology, 38; Droit, 284; Medicine, 99; Philosophy, 24; Philology, 106; Mathematics, Pedagogy, Pharmacy, and Agricultural Science, 189.

Remarkable Tumor.—Dr. W. Mussey, of Cincinnati (*Clinic*), recently presented at the Cincinnati Academy of Medicine a fibroid growth which was removed from the left labium of a child aged two and a half years. The tumor measured five inches in its longest by three inches in its broadest diameter. The little patient made a very rapid recovery from the operation.

The New Orleans Medical and Surgical Journal.—The first number, for July, of the new series of this journal has been received. It is edited by Dr. S. M. Bemiss, and published bimonthly; the present issue contains 144 pages of excellent matter, a large part of it original. We are glad to see our old contemporary again in the field, and wish it all possible success.

Standard Medical Preparations.—We can speak from experience of the excellence of the various elixirs prepared by the Messrs. Wyeth & Brothers, of Philadelphia. Their extract of beef, combined with wine and iron (vinum cibi et ferri), is an elegant preparation, and exceedingly useful in many forms of debility where solid food cannot be tolerated by the stomach.

Medical Register of the United States.—Dr. T. W. Butler, of Philadelphia, is making a praiseworthy effort to obtain a complete list of the regular physicians of the United States for publication. He is now sending circulars to various States, and his work will be greatly facilitated by their prompt return with the information asked for.

Jefferson Medical College.—We take pleasure in correcting an error in our June issue, in which we stated that this college failed to obtain an appropriation from the State last winter. We are glad to learn that the Legislature granted all the assistance asked for toward the establishment of a hospital in connection with the college.

A New Operation.—We learn from the *Canada Medical Record* that Dr. Rottot "operated for ovariotomy," at the Hôtel-Dieu Hospital, March 29th.

A Sketch of the French Hospitals.—Mr. J. F. West, Senior Surgeon at the Queen's Hospital, Birmingham, in an account of a recent visit to the French hospitals, which he read lately before the Midland Medical Society of Birmingham, criticises sharply some peculiarities which he noted in Continental hospital practice. Describing the hospital-surgeon in his round, he says (*British Medical Journal*): "His dress strikes one at once as characteristic and peculiar. The head is covered with a black-silk *biretta*, like that worn by Roman Catholic priests. The coat, generally old and blood-stained, has in its top button-hole a little red rosette, indicating that the wearer is decorated (and generally he well merits the distinction) with the Cross of the Legion of Honor: most strange to an English eye, however, is the large white apron, extending from the breast to the toes, with which he and his attendant *internes* (or house-surgeons) are clothed. On commencing the round, these aprons are all clean and spotless, and one begins to fancy that they are neither useful nor ornamental appendages. Not so, however, when you watch the professor and his assistants through the wards. You find that their progress from bed to bed is rapid, and that the aprons are in constant requisition to wipe the blood, pus, or urine, from the hands. Recourse is much less seldom had to soap and water than with us, and there is an evident carelessness about ablution, which to a vistor seems, to say the least, strange. Again, it is certainly rather a shock to our notions of decency and propriety to see the same finger which has recently been employed in passing a catheter or examining a rectum, after a hasty wipe on the apron, thrust into the mouth to examine some tumor of the tongue or jaws. This disregard of the feelings of the patient is carried to an extent which we should call extreme.

"At the St.-Louis Hospital, women with skin-diseases, whether syphilitic or not, are placed on a stool in a strong light, and then before the whole class requested by the physician to take off every article of clothing. There they stand perfectly naked, while the professor diagnoses their disease, and points out its peculiarities and proper mode of treatment to the assembled students. Such a disregard of the feelings even of prostitutes would not be sanctioned in this country. Indifference to the sufferings of their patients is again seen in the fact that at many of the hospitals the surgeon is attended through the wards by an *infirmier*, in his shirt-sleeves, carrying a brazier full of hot coals and the accompanying cauteries. These formidable instruments are not only displayed before the eyes of the patients who are about to be operated on, but they have to submit to them without having their eyes bandaged and without chloroform being administered. The agonized look of one poor little boy, whose hand was about to be scored with the hot iron for caries of the carpal bones, recalled to me those lines from Shakespeare's "King John:"

> 'Oh, save me, Hubert, save me; my eyes are out
> Even with the fierce looks of these bloody men.'

French patients, however, seem to bear pain more equably and unflinchingly than English, and to have a more implicit and unquestioning faith in their surgeons, and in the procedures they are adopting for their relief. Anæsthetics are certainly much less used than with us. I saw the actual cautery frequently applied, and also an amputation of the cervix uteri performed, without chloroform. But, worse than all, on one occasion some years ago, I saw a very eminent hospital surgeon try for half an hour to extract a hair-pin from the bladder of a woman, by means of forceps, without success, while the patient lay shrieking most piteously every time the sharp points of the pin lacerated the mucous membrane of the bladder and urethra, in the futile attempts made by him to get them into such a position that the smooth end of the hair-pin should first enter the vesical end of the urethra.

Mr. West pays a just tribute to the industry, devotion, research, and ingenuity of French surgeons and men of science, and to their many high mental qualities and great cultivation.

Last Illness of John Stuart Mill.—Dr. Gurney, who attended Mr. Mill in his last illness, has furnished to the London *Standard* the following details of the case, which he first saw on the evening of May 6th:

"Chest-signs normal, but respiratory murmur very feeble, and some dulness over lower portion of right lung. Chest generally narrow and contracted. The face, throat, neck, and chest, as regards its front aspect, covered with an erysipelatous eruption of a rose-color, intensely swollen on the right side, slightly so on the left, and here and there covered with patches of vesication, which soon after burst and discharged freely a clear serous fluid. With some difficulty I obtained a view of the palate, uvula, and tonsils, and found them much swollen, and with sore patches on both sides near the glands. The right upper eyelid was also denuded of the cuticle in parts, and discharging a watery fluid. The scalp was unaffected. I was told he had been slightly wandering, but on my arrival I found him to be perfectly collected, but restless. Considering his age and feeble state of health for some time past, the character and very extensive spread of the erysipelatous inflammation, and also that on the low-lying clay soil round Avignon erysipelas is endemic and very fatal, I formed the most unfavorable opinion of the case, and conveyed this impression (in, of course, appropriate terms) to his daughter and to himself. He received the information with calmness and resignation. I gave him two grains of quinine in solution every hour and a half, with three drops of tincture of aconite, and twenty of chloric ether added to the first two or three doses of quinine; subsequently he had the quinine alone in somewhat larger doses every hour; strong beef-tea at frequent intervals, and tea to relieve his thirst. I could not get him to take either wine or brandy. About 2 P. M., he rallied decidedly. The pulse was less frequent and firmer, and the swelling appeared less tense on the right side, but still travelled slowly downward over the left chest, till two-thirds of the whole was occupied by the eruption, the entire right side, down to the ensiform cartilage, being already affected. He had no pain, except in the throat, especially after swallowing, but felt great distress from the heat and weight of the swelling. As the powdered starch I had applied did not relieve this, I applied a thin, light, hot, and moist poultice, covered with oil-silk over the whole chest, which, he said, made him feel much more comfortable. About 4 P. M. his pulse changed for the worse again, and became slightly intermittent, the eruption assumed a bluish appearance on the right side of the chest, and some angry spots appeared over his right instep. The right upper eyelid became rather less swollen, and he told me he could again see with that eye, but the lid exhibited decided sores, from which flowed a considerable watery secretion of a limpid character. No purulent fluid seemed to be secreted throughout the whole case. The great swelling prevented my again examining the throat, but from the fact that he had from time to time, after exertion especially, a thin watery *râle*, which subsided after a few seconds, I concluded that some serous fluid found its way within the glottis. The respiratory murmur now became less audible, the heart's action weaker, the pulse more intermittent, yet he himself thought he was better, and asked to be read to by his daughter. About 7.30 A. M. a sudden attack of difficulty of breathing came on, and he died in a few minutes of apnœa, which probably saved him some hours' further struggle against the poisonous influence at work in his system, and then death from asthenia."

The Statistics of Rheumatism.—Dr. Peacock, in the annual report of St. Thomas's Hospital, London, gives the following as conclusions arrived at from a careful study of eighty-seven cases of acute rheumatism:

a. The acute forms of rheumatic fever are most common in early life. The chronic forms are almost peculiar to old age.

b. The disease is more common in men than in women, in consequence of their greater exposure to cold and wet.

c. One attack of acute rheumatism predisposes to another.

d. As many as nine attacks were found to have occurred in one patient.

e. In the majority of cases the disease runs a mild course.

f. In none of the cases reported did the temperature rise above 104° Fahr.; and in only a few did it reach 103° Fahr. The highest temperature was usually found on the day after admission.

g. Very little joint-mischief is sufficient to cause a rise in the temperature.

h. The greatest risk in the course of the disease arises from cardiac complication. Over 33 per cent. of the whole cases showed more or less signs of it, and in most instances the heart was found affected at the period of admission.

i. Cardiac complications are most common in early life, and are more frequent in the male than in the female.

j. The cardiac mischief is not directly proportional to the severity of the fever. In a mild case the heart may become affected, while in a severe case it may remain entirely unaffected.

k. Pericarditis is most common in the slight, endocarditis in the severe attacks. The former complication is more amenable to treatment than the latter.

l. Cardiac complication, although the most formidable, is not the only one to be feared in the course of acute rheumatism. Inflammations of the lungs and pleura are not unfrequent.

m. The treatment consisted, in *acute* cases, chiefly of the bicarbonate of potash, with or without some nitrate. In the subacute, iodide of potassium and small doses of colchicum were administered. When the pain was severe, opium or Dover's powder was given at bedtime; and mercurial purges when the tongue was foul.

n. Heart-complications were combated by blisters and poultices.

o. Convalescence was aided by quinine and iron.

Flexions and Displacement of the Uterus.—Dr. Hermann Beigel (in the *Wiener Medicinische Wochenschrift*, No. 12, 1873) contributes an able paper, well illustrated, on the influences of changes in the position of the uterus in causing sterility. After referring to the opinions of Matthews Duncan, Graily Hewitt, West, and J. Marion Sims, he gives statistics showing the frequency of versions and flexions in sterile women, and concludes, as the result of his own observations, that:

"1. The changes in the position of the uterus, whether versions or flexions, play an important part in the production of sterility.

"2. These conditions of the uterus, however, do not produce sterility *per se*, but it depends upon how far they cause closure of the uterine canal, and impede or entirely prevent the passage of the spermatozoa.

"3. Their influence is exclusively mechanical, in so far as they hinder the contact of the semen with the ovum.

"4. From this it follows that the removal of the malposition, where it is possible, is the only rational method of curing the sterility."

With the view of obviating these displacements, he employs an ordinary intra-uterine stem attached to an India-rubber ball, which is distended with air, after the introduction of the former, by means of a tube which is fastened to a belt surrounding the abdomen.

Dr. Ludwig Joseph (in *Beitrage zur Geburtshülfe und Gynäkologie*, ii. Band, 2 Heft, Berlin, 1873) reviews the opinions of various authors, as Virchow, Rokitansky, Tiedemann, Spiegelberg, Klob, Martin, Luschka, Henle, Scanzoni, Braun, etc., on the etiology of flexions of the uterus. He shows that anteflexion, either congenital or acquired, occurs most frequently in virgins or in those who have aborted, in these latter being the most frequent cause of the so-called "habitual abortion, produced generally by peritoneal adhesions to the posterior wall of the bladder, or by pressure from above, as in obstinate constipation, large collection of fæces, tumors, etc. After discussing in detail the arguments on either side, he sums up his conclusions as follows: 1. Rokitansky's theory of the normal structure of the uterus and the origin of flexions is doubtful, as the anatomical substratum upon which it is founded does not exist. So also the acceptation by Virchow that the mucous membrane of the uterus possesses a sub-mucous stratum is erroneous. 2. Virchow's views on the occurrence of flexions acquire more support from the anatomical facts observed. 3. Anteflexions, when not congenital, occurring from defective development of the anterior uterine wall are produced mainly by mechanical forces, which are situated either external to the uterus, or take place through parametritic cicatricial contractions, while retroflexions are produced generally through relaxation of the uterine tissue in consequence of defective puerperal involution.—*Medical Times and Gazette.*

Artificial Fibrine as a Diet.—Dr. John Goodman, in a communication to the *British Medical Journal*, says of artificial fibrine: As a member of the British Medical Association, and in the common interests of humanity, I have much pleasure in calling attention to my discovery of this new dietetic substance. So far as I have employed it, it promises fair to be invaluable in medical practice, especially in cases of feeble alimentation and deficient nutrition, and second to none in those cases where rejection of food forms a prominent feature, or where the appetite and digestive powers are reduced to a minimum. As fibrinous material, it is of course highly nutritious, and eminently adapted to all cases where there is a deficiency of fibrine in the blood. It is, perhaps, unparalleled in its qualities of lightness and digestibility, and is, moreover, a great delicacy. In many urgent cases of rejection of food, etc., it not only remains where an egg otherwise cooked would not be tolerated, but its presence in the stomach has been found to create a feeling of want rather than of superfluity, and to promote rather than decrease the appetite for food.

The production of this substance is within the reach of every sick-room, and is effected with great facility. It is formed by exposing albuminous material to the operation or influence of cold water, for a given period; and on account of its great plenteousness we employ the ordinary hen's egg for its production. When the shell is broken and removed, and its contents are immersed in cold water for twelve hours or so, they are found to undergo a chemico-molecular change, and to become solid and insoluble. This change is indicated by the assumption by the transparent white of the egg of an opaque and snowy white appearance, which far surpasses that of an ordinary boiled egg. The product, and the fluid in which it is immersed, must now be submitted to the action of heat to the boiling-point, when the fibrine will be ready for use.

Obituary.

Hugo Von Mohl, best known to English readers by the translation, by the late Prof. Henfrey, of his "Principles of the Anatomy and Physiology of the Vegetable Cell," died on April 1st. He filled the chair of Botany in the High School of Tübingen, and in the Tübingen University for many years, and he published about ninety special papers "On Vegetable Anatomy and Physiology."

William Tyler Smith, M. D., F. R. C. P., died June 2d, of apoplexy, aged fifty-eight years. Dr. Smith is well known to the profession in America, by his works on obstetrics. He began practice in London early in life, and, in spite of many difficulties, weak bodily health, and some other drawbacks to success, he rose to eminence. This was due to his self-reliance, his industry, and his courage. He was the author of "Parturition, and the Principles and Practice of Obstetrics;" "The Periodoscope, with its Application to Obstetric Calculations in the Periodicities of the Sex;" "Scrofula, its Nature, Causes, and Treatment;" "Treatment of Sterility by Removal of Obstructions of the Fallopian Tubes;" "Pathology and Treatment of Leucorrhœa;" "A Manual of Obstetrics," second edition; besides which, he contributed numerous papers to the *Medico-Chirurgical Transactions*, *Obstetrical Transactions*, *Pathological Transactions*, and to the various medical journals.

We announce with regret the death of Dr. Samuel D. Moses, which took place in Knoxville, Tenn., June 16th. Dr. Moses was born in New Hampshire, in 1826. He graduated at the University of Virginia, and after the close of the war filled the position of Resident Surgeon in the New York State Woman's Hospital. He was afterward engaged in practice for some time in this city. In 1869 he removed to Knoxville, where he established himself successfully in practice. His death is a loss to a large circle of friends, and to the profession of his adopted State.

Prof. Romberg, the distinguished author of the famous work on "Diseases of the Nervous System," died at Berlin, on June 16th.

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Original Communications.

ART. I.—*Scarlet Fever; Suggestions concerning its Treatment.*[1] By GEORGE BAYLES, M. D., New York.

IT is doubtful whether there is any marked difference in the aggregate of professional experience regarding the symptoms and phases of scarlet fever. It is probable, on the other hand, that there is a wide difference in our individual opinions and preferences as regards the remedial measures required in the management of this formidable disease. In a general sense, our respective views may not differ very widely, but our individual experiences have, doubtless, a great range in various and often opposite directions. Nothing is easier, for example, than to place an illusory value upon a great variety of incongruous details. This is nothing new in the history of medical practice; neither does it, in this experimental era of our profession, indicate any disregard of scientific accuracy, or of a lack of generosity in our respective views as practitioners.

In that form of scarlet fever which has no more gravity of character than the "simple fever" of Fordyce, or the "ephemera" of many writers, differences of opinion are not of essential importance. Such cases are not greatly dependent upon any special treatment for their recovery. Scarlet fever, however, has types and phases of a profound and serious nature. It is when treating these conditions that we find ourselves dealing with a formidable, subtle, and treacherous malady. Not a little aid, in the treatment of this disease, is derived from the prompt recognition of certain fairly well-defined analogies between the symptoms presented and the characteristic prevailing conditions of disorders of some other class or order. When scarlatina assumes the anginose form, an apt analogy is created between it and the *cynanche maligna*, the virulent element being supplied by the specific poison of the fever. The occasional diphtheritic features of the disease, under these circumstances, give weight to this impression. When scarlet fever assumes the congestive or *cerebro-meningeal* form, the analogy is readily apparent between that and the grave toxic conditions and physico-mental derangements pertaining to *phrenitis*, or perhaps to *cerebro-spinal meningitis*. When scarlatina assumes the adynamic type, the analogy is formulated between it and a *typhous fever*, so modified, however, as to create no purer likeness to *typhus* than to *typhoid*. It might be called a compromise between the two varieties of this miasmatico-neuropathic disease, generically termed *typhous*. The rule, in the very grave cases of scarlet fever, is, to present a combination of these analogous conditions, or at least a series of them in rapid succession.

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[1] Read before the Medical Library and Journal Association, May 30, 1873.

If this argument is not open to definitive contradiction, it rationally follows that our best clew to the treatment of scarlet fever is obtained by observing the course of successful treatment in these associative or analogous conditions in other diseases, in which such conditions are of primary origin and of initial importance.

There is so little in scarlet fever, except its pathognomonic rash and its thermometric cycle, that is strictly characteristic and independent of these imitations, that it might almost be termed the *borrowing* disease. Its mild cases resemble quite closely and characteristically the mild ephemeral fevers, both as regards symptoms and the requirements of treatment. Its grave cases present less of a consanguineous relation to scarlatina than to other malignant and well-individualized diseases. It is not proposed, in this paper, to follow out the whole train of thought suggested by these analogies. We can, however, without jeopardizing our argument, take up a single phase of scarlet fever and apply our views.

Notwithstanding its marked analogies, which conditions bear so distinctly upon treatment, it is not the less scarlet fever, let it be disguised at first and complicated afterward never so much. A vein of treatment of an antidotal or anti-miasmatic type must run steadily through the whole of the medical course adopted. The scarlatina-poison must be eliminated, and, from first to last, there must be medicines exhibited or measures devised to effect this particular object. It is always in the earlier stages of the disease that the course just indicated will have its greatest efficacy, for, under the exalted excitement of the systemic energies in the fierce contention with the invading poison, the most advisable, even if at times the most heroic, measures can be adopted without overtasking the vital powers under the double stress of poison and potent remedy. Besides, if successful, we have wellnigh expelled the poison by the time the superexcited energies have exhausted themselves, and we have also saved a measure of strength in favor of recuperations, whatever the subsequent complications.

After recognizing the disease, which it is commonly not difficult to do, especially if there is an epidemic prevalence, and if we have attended to the preliminary signs, we address ourselves to the work of coöperating with Nature in ridding the system as rapidly as possible of the specific poison. The partial suspension of the function of the skin is a prominent difficulty in all eruptive fevers, but more in scarlet fever than in any other form, excepting, perhaps, the confluent form of small-pox. Much the same must be said of the kidneys, the secernent action being especially diminished in scarlet fever, though notably so in any form of pyrexia.

Here, then, is our first indication for treatment, looking toward the elimination of the special poison.

The skin, kidneys, and secreting glandular system, must each be stimulated and excited to action, and that both speedily and copiously. Simultaneously, then, with the invasion and remedial treatment of the fever, we must begin the course which will expel the poison by correcting the perverse action or stimulating the suppressed action of the excretory organs. There is great difficulty in the management of this stage, and the probable cause of such difficulty is, that the symptoms indicate high arterial action, but the scarlatina miasm is very depressing, and the powers of life often sink, even without artificial reduction of strength. Some physicians let the arterial action have its full sway, for fear of subsequent exhaustion; others check the first advances of the disease, and take their chances of succeeding debility. For reasons already indicated, I incline to the latter course. The physician must discriminate carefully between oppression and prostration. This distinction is all the more important for those who espouse the views herein expressed, as the latter can never require evacuants. The first essay, then, of the practitioner must be the tranquillizing of the arterial excitement, and the next the restoration and maintenance of the action of the skin, together with the support of the functional activity of the kidneys and the secreting glands. Very much depends upon our success in the first measure indicated, toward the acquisition of success in the others mentioned. The subduing of the arterial hypersthenia is doubtless, therefore, of essential importance. In this stage, which corresponds with a stage of preliminary high arterial excitement in typhoid fever, the depletive or reducing course is urgently demanded.

That depletion must be by means nearly as prompt, and quite as effectual, as by bloodletting, is, I judge, a self-evident proposition. We have no lack of sound support for the desirability of bloodletting in the beginning of typhoid fever. Dr. Jackson approves conditionally and generally. Chomel likewise approves conditionally. Louis favors under no very restrictive conditions. Bouillaud favors even to the liberal measure implied by the term "*coup-sur-coup.*" If the cautionary conditions suggested by such authors as have been named were observed, in the early stages of scarlatina maligna, *in the adult*, actual bloodletting might not be inadmissible. In children, bloodletting cannot be demanded with a view to produce the desired impression, i. e., reduction of arterial force.

Other depletive agencies, less ultimately exhausting, though not the less promptly repressive, should be sought for and employed.

Tartar-emetic is the ready and safe substitute for blood-letting. This certainly is the case in typhoid fever at the outset, according to the views expressed by Withering (the apostle of the tartar-emetic treatment), also by Dr. Nathan Smith, and Delaroque. Louis is rather non-committal on the subject of tartar-emetic, and Gregory condemns its use.

Tartar-emetic, like sulphate of quinine, depends, for its therapeutic efficacy, upon the manner in which it is used. It is potent for good or for evil, according to the mode in which it is exhibited. Without discussing this point further, I will venture to recommend a febrifuge which, upon the strength of a considerable experience, has proved perfectly satisfactory. In this period of high exacerbation of arterial function characterizing the febrile invasion of scarlatina, I have almost invariably used a compound fever-powder composed of potassio-tartrate of antimony, nitrate of potassa, and pulverized ipecacuanha-root, in proportion as follows: Emetic-tartar, half a grain; potassa nitras, thirty grains; ipecac., six and a half grains; making a total of thirty-seven grains, to be divided into twelve powders. This will make each powder weigh three grains and a twelfth. Each powder has one twenty-fourth grain of tartrate of antimony. The average dose would be one of these powders, or three grains and a fraction, repeated with, at first, an hour interval, next two hours' interval, and, if still further repeated, from two to three hour intervals. The sedative effect is expected to be, and almost always is, immediate. I have scarcely ever had to give more than four of these powders, which is my usual allowance.

I will not attempt to analyze the action of this excellent febrifuge-powder, but will say that the combination indicated seems essential. No modification of the combination has answered the purpose at all. It is tolerated by the stomach in even much larger doses. Vomiting is not expected, and nausea to any degree to excite distress is not the common result. Nevertheless, its action upon the pulse and the temperature ought to be watched, and its use discontinued when each has moderated to a degree beyond which further reduction will be spontaneous and certain. Aconite is often used in the precise conditions in which I use this fever-powder, but seldom with like effect, so far as my experience goes; neither has veratrum given the same prompt results. Both aconite and veratrum have excited nausea and vomiting, which added greatly to the discomfort of the patient, and did not abate the fever to a degree commensurate with the reputation of these remedies as potent revulsives whenever exhibited. I think that, under any circumstances, i. e., as regards after-possibilities in the progress of the disease, these powders are permissible, in the stage of active fever, as a safe and prompt revulsive. Their action sooner determines what kind of case we have to deal with, and, by promptly arresting, as it does, the preternatural exaltation of the arterial system, a large measure of strength is saved with which to do battle with the scarlatina-poison in any other of its manifestations. With this particular medicine there is commonly a favorable reaction produced upon the skin and kidneys, which seems not alone dependent upon the tranquillization of the arterial circulation. A specially depurative action is excited, which will be manifest by any special examinations made of the perspiration and the urine.

This very stage of active febrile excitement, when especially excessive, as I have lately seen it to be in two cases, wherein the pulse became nearly dicrotous, and the self-registering thermometer indicated, after application in the axilla, 107 in one case, and 105½ in the other, in children three and five years of age respectively, is favorable for some vigorous action, *auxiliary* to the tartar-emetic course, as suggested. This action is the ice-water plunge-bath and the ice-water pack. In extreme cases of exceptionally high and persistent fever, I should not hesitate to employ the ice-cold plunge, immersion to be for a few seconds only, and followed at once by the cold-water pack. Though never having, as yet, been obliged to resort to this hydropathic measure, I am sure that it would be most grateful to the patients, and almost instantly be followed by some evidences of abatement of the fever. I feel very confident that this means would not only effectually and promptly diminish the violence of the fever, but also render the system susceptible to the action of other remedial agents which would sustain the good work commenced by the ice-water.

The extraction of heat by the application of cold is a recognized principle in practice, and the extraction of superfluous heat, by the application of a heat-absorbing agent of any description, would not violate the principle. Through my friend Dr. James R. Leaming I have been made acquainted with the wonderful heat-absorbing properties of *theobroma* (cocoa-butter). I do not venture too much when I say that, for its refrigerant action in fevers of the major kind, it is an agent cognate to ice-water. Its application must be frequent and lavish all over the cutaneous surface. It is absorbed so rapidly that a considerable time is required to so modify the general surface heat that any of it will remain upon the skin, thereby showing (when that is accomplished) the skin to have become, for the time being, supersaturated. The effect upon the patient is agreeable beyond expression, and I hope to see it supersede all other forms of inunction. That tossing violence of unrest and distress is at once measurably decreased. The temptation to constant repetition of this inunction is only restrained by the salutary fear that the interior caloric is not diminishing synchronously with that of the surface. That it should is more than desirable. This butter of cocoa has the rare advantage of being a valuable nutrient. Its liberal absorption by the skin is equivalent to a fair share of food taken into the stomach, and normally assimilated. During the desquamative stage it far surpasses lard or oils, being neither so disagreeably unctuous nor offensive to the smell. Indeed, the odor of the body after its use is positively agreeable. It always retains its massive form, ready to be laid aside like a piece of fragrant soap when, for the time being, no longer needed, and its application is, to the nurse, almost a pastime.

During the period of intensest febrile excitement, it is quite right to adopt a sort of *coup-sur-coup* course, so to speak, with this agent, as heat must be withdrawn as rapidly as possible for the comfort and welfare of the patient. Once an hour is as often as I have ever applied it, though it might be used oftener with benefit in some cases, and once every three or four hours is the minimum frequency where it is needed at all. I see no reason why, for similar conditions in other diseases, this admirable, pleasantly-flavored, heat-absorbing agent may not be used with great advantage.

Cold to the head must not be overlooked. In a child it cannot be applied in the same direct and comparatively unguarded manner as can be done in the adult.

I have found it sufficient, and more than *tolerable* (being *positively agreeable*), to have pounded ice enclosed in a bladder, and either laid or suspended near the vertex. The air, for many inches around the ice-bag, will be several degrees cooler than the prevailing temperature of the apartment. This can be borne for an indefinite period of time, as it is not attended with the shock ordinarily produced by other more direct applications of intense cold. The shifting and changing, so frequently required by other methods, to the great disturbance of the highly-excited or morbidly-conscious patient, are, by this method, quite done away with. On the small iron cots or cribs of the nursery, I have often hung the half-loaded ice-bag, within a few inches of the crown of the head, and induced thereby an undisturbed sleep for as much as an hour or more at a time. This refreshment has a value which we can all readily appreciate in the delirious or semi-delirious subject. Such practical matters relating to the management of the disease, in this stage of high vascular excitement and perturbation, may be more or less fully rehearsed at any subsequent period, calling for the resumption of measures similar to those adopted at the first. A relapse of the fever is as successfully treated by the means herein indicated as it is at the beginning, and for many reasons often the whole array of measures, such as are here suggested, are urgently demanded. For rapid reduction of abnormal temperature, I know of no better or more acceptable means.

After these exceptionally high and persistent fevers, there is often, if not commonly, ushered in that state which we have found trending toward the typhus condition. This tendency will be apparent often long before the preternatural exaltation of temperature has subsided. This fact will call for a cessation of tartar-emetic compound powder, and the substitution of a sustaining and blood-purifying medicine. We have tempered, if not cut short, the high, raging, febrile period, but this will inevitably be succeeded by a period of low and destructive febrile action, if not met with proper opposing remedies. In modifying, if not abridging the high fever, with its rapidly-exhausting effects, we have preserved a measure of constitutional strength and vigor, which, of itself, will materially modify the succeeding stage, and that favorably; but we have the elemental poison of scarlatina, as yet, practically unopposed. We now grapple with that in earnest, though we may have incidentally attempted something in that direction from the first, in addition to our anti-febrile efforts.

Under this division of our subject, I do not presume to offer any new or exceptionally valuable *medicine* for your consideration; but there is one agent which I shall urge upon your notice with all the earnestness of conviction, feeling that it may soon and justly come to be regarded as the sheet-anchor in the treatment of scarlet fever. I refer to oxygen gas. Its use, *ad libitum*, has undoubtedly saved the lives of several of my patients, and among these two of my own children. Before, however, referring more specifically to that wonderful recuperative agent, oxygen gas, let us consider briefly what I am much disposed to regard as sub-agents of the same general character. These, of course, include medicines (both depurative and tonic), diet, and pure air.

Medicines.—As early as possible after the recognition of the disease, and before the fever has attained the extreme of violence, I have derived much satisfaction from the beneficent action of the *hyposulphite of soda*. My friend Dr. M. J. Moses has a formula to which I commonly resort:

℞. Soda hyposulphite, grs. lxiv.
Syr. tolu, ʒj.
Aq. cinnamomi, ℥iij. M.
Sig. A teaspoonful every two hours. (Two grains of soda hyposulphite in each dose.)

In certain other forms of disease, I consider the hyposulphite of soda as possessing almost the qualities of a prophylactic when employed in time. It is certainly actively eliminative. It is not intended to supersede the fever-powder at any time. They are to be taken conjointly, and at alternate intervals, which will not cause mutual interference.

Where we have diphtheritic involvement, I have found much satisfaction in the use of what was suggested by Dr. A. Jacobi:

℞.	Acid. carbolic. solut.,	gtt. x.
	Chlorate sodæ,	ʒ ij.
	Aq. distil.,	℥ iv. M.

Sig. Teaspoonful.

As an agent in the prompt elimination of the poison, and as a general tonic and sustaining medicine, I have a formula suggested by Dr. James R. Leaming, and slightly modified by myself:

℞.	Ammon. murias,	
	Potass. chloras,	āā ʒ j.
	Ext. bellad. (English),	gr. ss.
	Tinct. ferri mur.,	ʒ j.
	Aq. cinnam.,	
	Aqua,	āā ℥ ij. M.

Dose, from thirty to sixty drops, repeated every two or three hours.

This medicine, or some essentially similar preparation, cannot be dispensed with throughout the entire course of the disease, even long after the fever, as an objective symptom, has disappeared. It both neutralizes and expels the specific poison, and gives Nature a chance to rally on the basis of her own and other judiciously-supplied resources.

In the matter of inunction, I would call your attention to a mixture which seems to have the property of preserving the caloric to a degree not much inferior to that possessed by the butter of cocoa in the direction of its withdrawal. It is of importance to have such a preparation, for there are times when the sudden sinking and exhaustion of the vital powers necessitate the substitution of calorifics for refrigerants. This can only be a temporary condition at any time during the active progress of the disease, but during early periods of invalescence it is often the case that the temperature runs down to a point requiring some prompt and special efforts to induce reaction, and I have found the following formula of great value:

℞. Ol. olivæ,
Glycerine puræ, āā ℥ ijss.
Solut. carbolic acid, gtt. x.
Ess. rose-geranium, gtt. xx. M.
Ft. lotio.

As a liniment for the throat and chest, as occasion requires, I commonly use the camphorated oil and oil of turpentine in equal proportions, applying the same with cotton-batting and oiled silk.

It not unfrequently becomes necessary to take some measure for restraining the undue action of the bowels. Among the many medicines in ordinary use, I find the tannic acid in mucilage of gum-acaciæ, in proportion of eight grains to the ounce, the most uniformly successful in overcoming the relaxation.

Diet.—Very much might be said upon the subject of diet in scarlet fever that would apply with equal aptness to many other forms of sickness, but alimentation in scarlet fever is, or ought to be, a very simple matter. In extremely grave cases of the disease, I scarcely look beyond milk for the alimentary nourishment required. Milk may be plain or condensed, warm or cold, even ice-cold if preferred. It may be reënforced with diffusible stimulant, or with egg, or it may be simple but well-made ice-cream. It is fluid or dissolvable food that is needed, ripe with nourishing properties, and rendered stimulating or not, as the case may require. Milk, generally simple, but at all events to serve as a basis for other simple sick-room preparations, is all that is required. It must be plentifully supplied, and very fresh. Ice-cream, usually so palatable and acceptable to the stomach, is, in this disease, a food of unparalleled excellence. Made of pure cream, it will nourish the body as well as the body will consent to be nourished. During convalescence, farina and corn-starch gruels or puddings, and plain rice-puddings, are good. Oyster-broth I have found very acceptable, and something of an appetizer. If cod-liver oil is indicated, but cannot be tolerated, pure fresh cream of milk will answer just as well, if not better. Fruits are generally allowable, especially after exhaustive, restless nights. Lemon-juice, to regulate the action of the hepatic function, is very serviceable.

Gelatine jellies are gratefully taken, and are doubtless very nourishing. If medicine is to be taken (and here I hope that I shall not be regarded as indulging in a triviality), I have conceived quite an affection for the enticing qualities and merits of the confectioner's "soft gum-drop," both before and after the act. It serves as an efficient aid and inducement to submit to the dose.

Of course, not a shred of meat or meat-essence is allowable until all danger of kidney complication is passed, if we would lean loyally upon the side of caution. Cold water, always craved, is, in my judgment, ever permissible in plenty. If the stomach rejects water, the thirst may be assuaged with pellets of ice allowed to dissolve in the mouth, or, with very young children, teaspoonfuls of ice-water very often administered. In the throat complication, the grateful impression of ice-water swallowed is a very noticeable fact, and may be regarded as a remedial adjuvant.

Isolation.—The separation of the sick from the well, as soon as the disease is recognized, is manifestly of great importance in limiting the spread of the disease. That can be done more or less effectually, according to the means and social privileges of the parents or guardians of the patients.

Scarlet fever invaded my family during the past winter. The disease was recognized first in a boy of three years of age. All the rest of the children (four) were sent immediately away. In about twenty-four hours the drooping and other characteristic symptoms were observed in a little girl of less than five years, and she was returned to her home.

A boy of nearly nine years of age, a girl of between six and seven, and an infant of less than four months, were kept absent from home nine weeks, and escaped infection.

The sickness ran a very severe course in both cases, but terminated in recovery. I cannot doubt but that the exemption from sickness enjoyed by the others was due to their prompt and perfect isolation.

Disinfection cannot be too often or too freely practised by every available means. Carbolic spray cast about the room and passages, also thrown upon the person of each and every attendant almost hourly, gives comforting assurance of the destruction of the infinitesimal germs of the disease floating about the apartment, and lodging anywhere so as to be portable and pernicious. Clothing destined for the wash ought to be dropped into water before leaving the sick-room, and the water will readily quench poisonous germs if a sufficient quantity of the solution of the *liqueur de Labarraque* is mingled with it. Commode-vessels ought to be liberally supplied with the same solution. Fresh, pure air is a disinfectant of no insignificant value. Its generous admission into the sick-room is a prime necessity from the beginning to the end of the disease. In houses occupied by one family, I believe the main door of the sick-room ought always to be left partly open. A current of air is thus established commonly in the direction from the door to the chimney-opening, with obvious good results, and no drawbacks worthy of mention. With little difficulty or expense, the sick-room can be supplied with an adjustable and very efficient ventilating apparatus for the window, which I have tested to my entire satisfaction. I refer to Maine's patent, sold by Underhill & Co., No. 95 Duane Street, New York City. I puchased one at the beginning of the sickness referred to in my family, which occurred during the coldest part of an exceptionally cold winter, and used it constantly day and night. The air of the room (both patients occupied the same room) was always so remarkably pure that it was a constant subject for observation on the part of those who were admitted. Drs. James B. Kissam, Leaming, Jacobi, Moses, Davis, and other medical friends, who saw my home patients in council, were each impressed with this fact, and yet the temperature was never allowed to vary two degrees above or below 70° Fahr. for three months.

As often as I have seen this ventilating apparatus in the windows of halls, and offices, and places of public assembly, I have never seen it elsewhere than in my own house in the private sick-room. I heartily commend it to your favorable attention as a supplementary means for efficiently regulating the temperature and purity of the air in the private sick-apartment. Of course, every care should be taken to avoid needlessly vitiating the air of the room.

Oxygen Gas.—I would also advocate the use of this element.

Indeed, I would enthusiastically commend its use as a remedial measure in scarlet fever. Dr. Andrew H. Smith, in his prize essay on "Oxygen Gas as a Remedy in Disease," has given us evidence of great force and value relating to its general applicability in wasting diseases. Dr. Smith had no facts at his command, however, more remarkable than some within my own knowledge, relating to the recuperative and sustaining value of this remedy in scarlet fever, diphtheria, and other allied maladies depending upon blood-poisoning.

In some extremely critical cases of scarlatina maligna, I have observed the seeming paradox that its action upon the system accommodates itself to the state of undue elevation as well as to that of undue depression. It has proved itself, to my mind, to be an agent wedded to the happy medium of systemic force and excitement, and as capable of modifying favorably one extreme condition as the other. I have no hesitation in using it now as a potent auxiliary in the stage requiring depressing measures, and as an equally potent auxiliary in the stage requiring "building up" or supporting measures.

It will tranquillize in one stage and energize in the other. In a surprisingly short time, with the free use of the gas, I have seen the pulse brought down from high levels to very nearly the normal standard of health; and in the same subject, at another time, the pulse small, thready, feeble, and slow, would quickly be sent up to its normal range and volume. Under these circumstances, it is surely right and proper to enter upon its use at a very early period in scarlet fever, and to continue its use throughout the whole period of the sickness.

I have never seen a case succumb to the blood-poisoning wherein this element has been used. In conjunction with fresh air, freely admitted, it seems to leave us little else to desire with regard to favorable surroundings and wholesome tendencies. The investigations of Beddoes, if they did much toward toning down the extravagant hopes entertained of oxygen gas, did, nevertheless, establish the fact that, as a therapeutic agent, it meets precisely many indications that could be reached by no other known means. Food and drink are not so essential in some stages of the toxicohæmic diseases as oxygen, whether received in limited supply through the medium of the atmospheric air, or in liberal supply from the gas-tank.

Some of the experiments made upon animals, with a view to correcting induced abnormal conditions very accurately resembling characteristic conditions in scarlet fever, and other diseases, have proved its great value as a therapeutic agent.

It is also a positive antiseptic. In every one of Dr. Smith's cases, I find some conditions radically analogous to conditions that I have encountered in cases of scarlet fever. Where oxygen gas has been so supremely useful in remedying these grave conditions in certain forms of disease, it can scarcely fail to be operative in others. In cases of scarlet fever, I have rarely seen any occasion for limiting the use of the gas. A little irritation to the respiratory organs it was easy to obviate by the same means adopted in controlling the too great shock of cold when applied to the head. In the case of the ice-cold to the head, you remember, I created a frigorific atmosphere in the neighborhood of the head. So in the case of the gas, if direct inspiration creates irritation and nervous excitement, I would simply discharge the gas into the atmosphere immediately surrounding the head and shoulders of the patient. I would fill the bag from the cylinder, and then by pressure, between the fingers, upon the rubber tube, would partially control the escape of the gas. Then I would whirl the loose extremity of the tube in a circle around the head, impregnating with the gas every part of the adjacent atmosphere. The effect of this method was in all cases perfectly satisfactory, and gave rise to other obvious benefits than the one particularly referred to.[1]

It is very clear to my mind that, if we desire to seek "euthanasiæ," our purpose would be almost diametrically opposed by resorting to the use of oxygen gas.

In advanced convalescence, I find an excellent article for lavatory purposes to be the "toilet carbolic soap" of Buchan. It is soothing and softening to the skin, and creates an agreeable cleanly odor about the person. I like, also, for an appropriate tonic medicine, at once efficient, and not likely to be loathed or rejected by young children, the well-known "chemical food," so called, the compound syrup of the phosphates of iron, lime, potassa, and soda.

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[1] I might mention that the sustaining and mildly exhilarating effects *upon the nurses* about the bedside were always very noticeable, acting thus favorably upon their jaded spirits, and reacting favorably upon the patients.

It is a good and useful combination, and in my practice has, in these cases, been all that I could desire as an agreeable and efficient tonic recuperant.

Simple and benign cases of scarlet fever ought to be treated with simple and benign agents. Under all circumstances (according to Chomel, Charité, Hôtel Dieu), "treatment ought to be rational or symptomatic, regulated by common-sense and experience."

We may reasonably hope that the treatment of the graver cases of this dire disease will soon become more uniform, more exact in its application, and more prompt and positive in its beneficial results.

ART. II.—*Perityphlitis.*[1] By WILLIAM T. BULL, M. D., New York.

BY perityphlitis we understand an inflammation of the connective tissue which intervenes between the cæcum and the iliac fascia. This term, from περι and τύφλον, the cæcum, is to be preferred to the names abscess of the iliac fossa, phlegmonous tumor of the iliac fossa, and abscess of the appendix vermiformis, under which the affection has been described by many writers. The last named of these is really inaccurate, for it expresses a condition which does not exist. The term *phlegmon*, as applied to inflammation of the connective tissue, is almost obsolete, and abscess expresses only one of the terminations of the inflammation.

Etiology and Pathology.—In most cases perityphlitis is secondary to disease of the cæcum or appendix vermiformis. It occurs, however, as an independent affection from the influence of cold or traumatic causes. It may also be developed in pyæmia, typhus, and puerperal fevers, and in pulmonary consumption, or result from extension of inflammation from the peritonæum, psoas or iliacus muscles, caries of the vertebræ or pelvic bones.

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[1] An inaugural thesis, to which the first prize was awarded by the Faculty of the College of Physicians and Surgeons, New York, February, 1872.

It is as a secondary affection to lesions of the cæcum and appendix that perityphlitis is of greatest interest; for these conditions may exist without giving rise to symptoms which excite the attention of patient or physician till it is developed. A careful consideration of these elements in the causation is of practical importance. The earlier observers of this disease did not fail to appreciate the connection of these conditions with perityphlitis. Dupuytren, Menière, and Dance, believed that it was produced in many cases by extension of inflammation from the cæcum, but they seemed to have overlooked the appendix; while Burne and other writers, who first called attention to its diseases, asserted that perforation of its coats, and much less frequently of the coats of the cæcum, was the chief cause. Further study has shown both views to be correct, and has added other influences to the list of causes.

Acute inflammation of the mucous membrane of the cæcum, typhlitis, cæcitis, is a common affection in the early and middle periods of life. In most cases its lesions are limited to swelling and injection of the mucous membrane, and of its follicles, with serous infiltration of the submucous tissue and serous exudation, and its course is toward speedy recovery. But it is often of much more severe type, especially in persons of strumous, delicate, or enfeebled constitution. The acute form, or more frequently a chronic inflammation, to which the acute has supervened, goes on to ulceration and even to perforation (typhlitis stercoralis of the German writers). The swollen mucous membrane softens and is destroyed by ulceration, and the submucous and muscular coats are exposed. Cicatrization may take place at this stage, or ulceration may destroy the cellular and muscular coats, and perforation result. In the mean while the inflammatory process extends to the surrounding tissue, and a circumscribed peritonitis or a perityphlitis is developed, as the anterior or posterior wall of the intestine is affected. In favorable cases, with the cessation of the intestinal inflammation, the secondary process subsides, and the exudation is absorbed. But, in unfavorable cases, the effused lymph breaks down and forms an abscess, the course of which will be determined by its locality, whether in front, and encapsuled by adherent intestines, omentum, and abdominal wall, or posteriorly in the cellular tissue. In the latter case we have the abscess of perityphlitis; in the former the abscess cannot, strictly speaking, be so called, but is advantageously spoken of in this connection, as it presents the same general phenomena, and is amenable to the same measures of treatment. Perforation of the intestinal wall anteriorly allows the escape of the contents into the peritoneal cavity, and general peritonitis is set up. A partial peritonitis with adhesions precedes this issue, and an abscess might be formed. When the posterior wall is perforated, the cellular tissue behind the cæcum, already inflamed, is infiltrated with putrid material, and suppuration ensues. This is by far the most frequent result of typhlitis stercoralis. Dr. Bartholow observed it in twelve of fourteen cases.

Typhlitis is generally caused by the irritation of stagnant fæces or foreign bodies, as the cæcum, from its dependent position and facility of distention, affords a ready lodging-place. Here, too, the intestinal current is propelled against the force of gravity. Foreign bodies, unless they are of large size, operate most frequently in the appendix, and will be spoken of in that connection. Of thirty-two cases of perityphlitis, noted by Bartholow, in six only was the cæcum perforated by foreign bodies; while, according to the same observer, three-fourths of the perforations of the appendix are caused by them. The greater frequency with which the posterior wall is affected is explained by the facts that the current of the fæces in the cæcum is from before backward, and that the folds of this part of the intestine readily give lodgment to hardened fæces and foreign bodies.

The appendix vermiformis is involved in inflammation of the cæcum, but generally to a less extent. It is, however, far more frequently affected with the changes described in connection with the cæcum than the cæcum itself; and, being removed from the general canal, no symptoms are produced till the inflammation has extended to the neighboring tissues. As before stated, foreign bodies are the most frequent cause of inflammation here. The lesions produced by these agencies are similar to those already described, and the same secondary inflammations are set up. Cicatrization of the inflamed spots is, however, almost unknown, perforation being the rule. This is accounted for by the difficulty with which a foreign body would be expelled, owing to the paralysis of its muscular coats from the morbid process taking place in it, and to the adhesion of the appendix to surrounding parts. In the cæcum, the fecal matters, or foreign body, are generally dislodged by the intestinal current, and cicatrization occurs. Of the secondary inflammations, peritonitis and perityphlitis, it is impossible to pronounce so positively as in the case of the cæcum, because the anatomical relations of the appendix are not so constant. Situated normally to the inner side of and behind the cæcum, and covered with peritonæum for a portion of its length only, inflammation limited to its extremity would extend soonest to the cellular tissue; while, if situated near its orifice, the serous covering would be earliest affected. But, in most cases, the inflammation is not so limited, even perforation occurs at several places, and the close proximity of the parts—the length of the appendix seldom exceeding three or four inches—makes the coexistence of the two conditions almost inevitable. A general peritonitis is a very frequent result of perforation of the appendix, and statistics vary much as to the relative frequency of this, and perityphlitis with circumscribed peritonitis. Leudet states that he observed general peritonitis in only one of forty-three cases of perforation of the appendix, while circumscribed peritonitis and formation of abscess in the iliac fossa took place in eleven of thirteen cases. Bamberger noticed, in a collection of ten cases, seven of general and three of circumscribed peritonitis.

The foreign bodies which have been known to cause perforation of the cæcum and appendix are very numerous. They are often discharged from the abscess, or found on *post-mortem* examination. An enumeration is useless, but we may profitably distinguish between intestinal or fecal concretions and other substances, such as seeds of fruit, metallic and animal substances, gall-stones, portions of indigestible food, etc., etc. The former are by far the most frequent. They are of rounded, ovoid form, vary in size from a cherry-pit to a bean, and of cheesy consistence, or even of stony hardness. In the fresh state they have a strong fecal odor, and are of the color of natural fæces. When dry they are found to have a structure similar to urinary calculi, consisting of the phosphate and carbonate of lime, or of magnesia deposited in concentric laminæ around a nucleus, which is sometimes of fecal origin, at others a foreign body.[1]

Gall-stones have been often found, and Copland mentions a concretion which consisted of cholesterine alone. One explanation of the production of these bodies is that fæces, forced into the appendix by overdistention or irregular contraction of the cæcum, become hardened by the absorption of their fluid contents, and by the precipitation of the salts of the secretion of the mucous membrane are converted into concretions. Favre and Bärwinkle[2] believe that they are the inspissated secretions of the follicles of the appendix, and Bamberger suggests that adhesions may exercise an important influence in their production, allowing the ready entrance of fæces or foreign bodies, but preventing their exit. The condition of the orifice, and of the valve of mucous membrane which guards it, suggests another element in their causation. Dr. Lewis has called attention to this point, and states that considerable difference exists in the size of the opening and its patulousness. A case has been observed by Dietrich,[3] in which the orifice was closed by cicatricial tissue, and the appendix dilated into an hydropic sac, the size of a hen's-egg, containing the secretions of the mucous membrane, and which, by bursting, caused general peritonitis and death. It should be stated that two observers, Claus and Lebert, have contended that idiopathic diphtheritic inflammation, and very seldom a foreign body, was the cause of perforation of the appendix. The latter saw three cases[4] due to this. That a foreign body may be present and cause secondary inflammation without

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[1] M. Vidal (*Gaz. Hebd.*, October 28, 1864) saw a plum-stone which had undergone complete petrifaction.

[2] Schmidt's "Jahrbücher," vol. lxxxi., p. 314, 1854.

[3] Ibid., vol. lxxxiv., p. 307, 1854.

[4] *Deutsche Klinik*, 1855, No. 26, p. 288.

perforation, has been shown in a case reported by M. Vidal (already referred to), in which, after death from peritonitis, the appendix, containing a petrified plum-stone, was found to be inflamed and deeply ulcerated, but perforation had been prevented by a formation of false membrane.

Perforation of the appendix is also due to typhoid ulcers, and occurs in advanced cases of pulmonary consumption. Cases of the former are rare. Bamberger and Claus each noticed one in ten cases of perforation. Grisolle mentions one, and Buhl collected three.

The coincidence of iliac abscesses with tuberculosis of the lungs was noticed[1] long before the link between the two, viz., perforation of the appendix, was made known. This is not of common occurrence, taking place for the most part in protracted cases, and often gives no symptoms. Leudet, in a collection of thirteen cases of perforation of the appendix, notes three which occurred in pulmonary tuberculosis, from the ulceration of tuberculous matter, leading to circumscribed peritonitis with formation of abscess in the right iliac fossa. In only one of the three cases were any symptoms noted, and in that a dull pain existed for three months previously to death.

A remarkable case is recorded[2] of a phthisical patient in whom a tumor, which had appeared a year previously in the right groin, was opened a month before death. At the autopsy the mucous membrane of the cæcum and ascending colon was found to be deeply ulcerated, and several ulcerations existed in the posterior wall of the former, communicating with an abscess beneath the iliac fascia which opened below Poupart's ligament.

Exposure to cold constitutes an efficient cause of perityphlitis. Occurring thus it has been called rheumatic perityphlitis, and is said to terminate generally in resolution. The influence of cold is an active agent in the production of the intestinal troubles which precede it.

Many cases are recorded which prove the direct influence of traumatic causes. Blows, falls, or muscular efforts, are the most frequent of these. Dr. Battersby observed a case in an infant, six months old, which followed directly a fall from the cradle. Mr. Symonds[1] noticed the development of an abcess in the right inguinal region after the reception of a blow from a hay-fork in that quarter. Grisolle saw a case which occurred immediately after a strong effort to prevent falling on the head. It is probable, however, that these influences act oftenest as exciting causes when a patient is already predisposed from the existence of disease of the cæcum or appendix. A case is mentioned by Boyer, of a man who, in dragging a cart, experienced pain in a tumor of the right iliac fossa, which had existed for several days, and which subsequently opened and discharged pus. The injudicious administration of purgatives in typhlitis, in the same way, may aggravate the primary disease, and thus increase the liability to the development of the secondary affection.

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[1] C. Hawkins, *London Medical Gazette*, x., 820; xxxviii., 507, 822.

[2] Schott, *Gazette Hebdomadaire*, January 19, 1862.

In severe cases of typhus, perityphlitis occurs in connection with extensive sloughing of the connective tissue in other parts of the body; but in this case, as in pyæmia and puerperal fever, in the latter of which diseases it is due to extension of inflammation from the pelvic connective tissue, it constitutes but an insignificant complication.

Inflammation of the psoas or iliacus muscle may extend to the connective tissue of the iliac fossa, but more frequently the reverse is the case. In peritonitis, caries of the vertebræ or pelvic bones, the connective-tissue lesions are of slight account.

The eruptive fevers and enteritis may be considered predisposing causes of perityphlitis, since they produce disturbances in the alimentary canal which may eventuate in it. The same may be said of constipation and the ingestion of indigestible articles of food.

Males are much more liable to be affected than females; in the proportion of 32 to 4, according to Marchal de Calvi; 37 to 9, according to Voz; 20 to 4, according to Bamberger, or about 5 to 1. The period between twenty and thirty is the most frequent time for its occurrence. Of thirty cases, Bamberger found 8 between ten and twenty; 12 between twenty and thirty; 4 between thirty and thirty-five ; 2 under ten; 2 over fifty.

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[1] *Medical Times and Gazette*, September 7, 1861.

Anatomy.—The situation of the cæcum in the right iliac fossa connected to the iliac fascia by loose connective tissue, and its relation to the peritonæum, which holds it firmly in place by passing over its anterior surface, explain the occurrence of peritonitis or perityphlitis. The ulcerative process presents itself under two forms, the diffused and the circumscribed. The former of these, called diffuse catarrhal ulcer by German writers, is that which results most frequently from the irritation of fæces or foreign bodies. Its appearances have already been described. The latter, called by Rokitansky the follicular ulcer, begins with swelling of the follicle and injection of the surrounding tissue; ulceration begins within, and a small follicular ulcer is formed; the follicle is gradually destroyed and ulceration extends to the surrounding mucous membrane, which is destroyed in large, irregular patches, often separated by healthy tissue, and the sub-mucous and muscular coats are exposed. Dr. Bartholow has described a somewhat similar condition which he calls "the perforating ulcer of the cæcum," considering it analogous to the round ulcer of the stomach.

In the appendix, the causes which operate being the same as in the cæcum, the lesions are similar. The mucous membrane has been found to present signs of all grades of inflammation and to be accompanied with thickening and softening of its walls. The most frequent seat of perforation is the lower third. The solution of continuity varies in extent from the size of a pin-hole to the whole circumference. The latter is frequently the case. The number of perforations in most cases is limited to one, but more often exist, and Claus saw five in one case. Perforation of both cæcum and appendix at their junction has occurred. Cicatrices have been found in appendices which contained foreign bodies, indicating that the body had changed its place from time to time, or that one previously detained had been expelled. It is worthy of mention that in autopsies the appendix has been often found distended with fæces, and containing the very same bodies, without the least sign of inflammation, which at other times have been the cause of the gravest consequences. In one case, a single shot, lodging in the appendix, has caused abscess of the iliac fossa with adhesion and perforation of the bladder,[1] while, in another, the appendix of a man, who during life had never complained of trouble in this quarter, was found stuffed full of robin-shot. The man was reported to have been very fond of game, and the shot found were supposed to have been contained in the birds eaten by him.[2] It is proper to state that other results may follow perforation of the appendix, owing chiefly to variations in its position. It may depend into the pelvis, and perforation and adhesion of the bladder occur; turned upward toward the abdominal walls its cavity may communicate with the open air; adhesion and perforation of the large or small intestine may also result.

The seat of the purulent collection is primarily the right iliac fossa, bounded above by the line of the crests of the ilia, and below by the brim of the pelvis, and walled in by adhesions. In some cases of perforation of the appendix, and of perforation of the anterior wall of the cæcum, the pus has been contained within the peritoneal cavity, the walls of the abscess being formed by the adhesion of the intestines and omentum to the abdominal wall. As has been stated, such are not, properly speaking, cases of perityphlitis. Collineau called these intraperitoneal abscesses, to distinguish from those situated in the iliac fossa, which he called extraperitoneal. The sheath of the psoas muscle has been opened and converted into a pus-cavity. Softening and disintegration of the muscular tissue have proceeded to such an extent as to leave bare the nerves of the lumbar plexus. The pus may burrow in all directions. It has been known to perforate the abdominal walls, the diaphragm, the innominate bones, the cæcum, rectum, bladder, uterus, vagina, ureter, internal iliac artery, and vena cava, and to open into the peritoneal cavity. Before opening occurs, however, thrombosis and inflammation of the mesenteric veins may occur, followed by pylephlebitis, with or without abscess of the liver, and pyæmia be developed. An analysis of sixty-seven cases, with reference to the comparative frequency of these results, exhibits twenty-eight cases of opening of the abscess externally through the abdominal walls, fifteen of opening into cæcum, eight into the peritoneal cavity, two into the thorax, two into rectum, two into bladder, two into internal iliac artery, one case of chronic peritonitis, and six of pyæmia.

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[1] Baernhoff, *Deutsche Klin.*, 1855, 33.

[2] *New Englaod Medical Journal*, 1843.

Bursting of the abscess externally is thus seen to be by far the most frequent. The spot at which the abscess pointed has not been definitely stated by many observers. Of the twenty-eight cases just mentioned, in thirteen the right inguinal region, or the right iliac fossa, is designated, in eight the groin, in three the lumbar region, in one the thigh, in one the umbilicus, in one the ischiatic region, and in one the loins and groin simultaneously. The next most frequent is opening into the cæcum, as it occurred in fifteen of sixty-seven cases. The frequency of this result is explained by the close proximity of this part of the intestine to the abscess-wall, by the less resistance offerred to the pus by its posterior wall uncovered by peritonæum, and by its slight mobility. In not a few cases, opening in more than one direction has been seen. Thus, of the fifteen cases in which opening into the cæcum occurred, in three subsequent opening externally took place, in one the abscess burst into the bladder. In a single case the pus first penetrated the bladder, then opened in the back. In two cases simultaneous openings occurred in the loins and in the groin.

Invasion of the peritoneal cavity is seen to be next in order of frequency. General acute peritonitis is the invariable result, but this may also ensue from the gradual extension of the circumscribed peritonitis, which must almost always be present in the vicinity of the abscess. A case of chronic peritonitis is mentioned by Ferral. It should not be forgotten that, in very many cases of perforation of the appendix, general peritonitis ensues directly without the intervention of any abscess, owing to the rapidity of the ulcerative process.

Inflammation of the veins leading from the abscess with or without thrombosis, and a similar condition in the portal vein, has been found in six of sixty-seven cases. Abscesses in the liver existed in all of these, and in one in the lungs and spleen also. In one[1] of these cases the principal branch of the superior mesenteric vein, of the size of a goose-quill, opened directly by ulcerated and torn end into the cavity of an abscess behind the ascending colon the size of a hazel-nut. The appendix vermiformis, perforated in three places, also communicated with the abscess. The walls of the vein, and of the portal vein, even in the interior of the liver, were discolored and covered internally with inflammatory exudation, and on pressure yielded a putro-purulent fluid. In a case reported by Dr. Munk,[2] the autopsy revealed a "perforation of the appendix, an abscess in right iliac fossa behind cæcum, which was also perforated; the ileo-colic vein before junction with the mesenteric contained a thrombus; thrombus the size of a pea in portal vein; scattered collections of pus in the liver, the surface of which was covered with bile-colored fibrine."[3]

Perforation of the diaphragm with rupture into the pleural cavity must be rare. The two cases referred to are reported by Duchek in Schmidt's "Jahrbücher," 79, 1853, p. 34, and Dr. Habershon, in "Guy's Hospital Reports," 1865, p. 132. In the former, *post-mortem* examination showed "chronic ulceration of vermiform appendix with perforation; abscess behind colon, and upward to liver; a purulent exudation between liver and diaphragm, with perforation of the latter; empyema on the right side, and compression of the lung."

Symptoms.—The symptoms of this condition are pain, the presence of a tumor in the right inguinal region, functional disturbances of the stomach and intestines; to which must be added the constitutional disturbances, fever, chills, and sweats.

The pain usually marks the beginning of the disease, though in some cases the tumor is noticed first. It varies much in intensity and character, but its seat is quite uniformly the right ileo-cæcal region. It may be deep-seated and dull throughout, or at least until the tumor attain a considerable size, or very sharp and lancinating, or paroxysmal, and is increased on pressure. In typhlitis the pain has the same characters, but with the development of perityphlitis it becomes more severe, and radiates from the cæcal region over the entire right side of the abdomen, down the right leg, and sometimes extends to the genitals; or it is accompanied by œdema of the foot or leg, retraction of the testicles, or erections. In some cases the patient lies on the right side, with the body bent forward to relax the abdominal muscles, and the right leg is forcibly drawn up. The pain in the extremity sometimes gives way to a feeling of numbness as the disease progresses. The dull pains are due to the inflammation of the connective tissue behind the cæcum; the sharper, colicky pains to the affection of the intestines, or to circumscribed peritonitis; while the pressure of the tumor on the nerves of the lumbar plexus causes the pain and numbness in the extremity and the pain in the testicle with retractions. Compression of the iliac vein causes thrombosis and œdema of the extremity, and the spasmodic rigidity of the leg is due to degeneration of the fibres of the psoas and iliacus muscles.

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[1] Aufrecht (*Berlin. Klin. Wochenschrift*, vi., 29, 1869), Schmidt's "Jahrbücher," 1870, p. 22.

[2] *Deutsche Klinik*, 51, 1859.

[3] The other cases are reported by Ormerod (London *Lancet*, May 30, 1846), Saltzer and Reuling (*Deutsche Klin.*, 1855, 38), Broca and Buhl (*Arch. Gén.*, August, 1858).

The tumor, the most characteristic sign of the disease, appears in the ileo-cæcal region of the abdomen. At first it is not visible externally, but can be felt on careful palpation. It is deep-seated, smooth, firm, and immovable, and the muscular parietes are movable over it except in cases where adhesions have been formed. It varies in size from the dimensions of a walnut to that of a child's head, averaging those of an orange. It is tender to the touch, and yields on percussion a note varying from complete dulness to tympanitis, according as the cæcum in front of it is distended with air or compressed, and sometimes gurgling sounds are heard over it. Exploration is rendered difficult in some cases by meteorism of the intestines. The time of the appearance of the tumor varies from two or three days to a month, and it may remain latent for several months. Its pressure on the cæcum and intestines causes constipation and vomiting, on the vessels[1] and nerves, the pains, œdema, etc., just described.

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[1] The artery is not easily compressed, but Grisolle has seen a difference in pulsation and temperature in the two extremities.

Of the functional disorders of the stomach and intestines, constipation is the most marked. This symptom is almost universal in the beginning of the disease, is generally obstinate, and is affected only occasionally by the action of purgatives, or gives way for a brief period to a slight diarrhœa, which discharges only the products of an intestinal catarrh. Loss of appetite, nausea, and vomiting, are all prominent symptoms. The latter is very frequent, accompanying the constipation, is often very severe, and even stercoraceous. Hiccough may be a distressing symptom.

The constitutional symptoms are not generally severe. The fever is moderate throughout, and may even be wanting. At the time of the formation of pus it is marked by exacerbations toward evening, and accompanied by chills and sweats. Chills seldom occur at the beginning of the attack. When suppuration is long continued, these symptoms are increased in severity, are accompanied by diarrhœa, and the patient may die from exhaustion. As occasional symptoms, should be mentioned ardor urinæ, pain in the bladder, suppression or retention of urine, dysenteric tenesmus, and tympanitis.

Course, Duration, and Termination.—The symptoms just described present themselves in such a variety of combinations that it is difficult to give a faithful picture of this affection. It either supervenes directly upon a well-marked attack of typhlitis, or is preceded for weeks or even months by obscure abdominal symptoms. Dull pains diffused over the abdomen, with occasional attack of indigestion or colic, gradually centre in the ileo-cæcal region and mark the beginning of the attack. Again, sharp pains in this region follow exposure to cold, violent efforts or blows upon the abdomen, or are experienced without any apparent cause. Nausea and vomiting, with or without some febrile action, ensue, and are followed by constipation and the appearance of the tumor. A slight diarrhœa often precedes the tumor, but gives way to constipation. The tumor appears after an interval ranging from two days to a month, averaging from five to ten days, and generally develops rapidly. As it increases, the pain becomes more intense, and radiates over the abdomen down the extremity and to the testicle, and œdema and other signs of compression may occur.

The vomiting becomes more frequent and even stercoraceous, and the constipation persists. The patient may lie in bed unable to move without the greatest torture, and the abdomen be tympanitic, hot, and tender. The fever is increased, and chills and sweats may occur. Such a severe course is likely to attend perityphlitis from perforation of the cæcum or appendix. After favorable cases of typhlitis or from cold or injuries, the course is generally subacute. The pain is confined to the abdomen or to the region of the tumor, which develops slowly, the constipation suffers remissions, during which natural fæces are discharged; vomiting is not severe; the fever is slight, and chills do not occur.

The duration and termination of the disease vary according to the course of the inflammation. It may end in resolution or suppuration. In what proportion of cases resolution occurs it is impossible to say. Grisolle says it occurred in two of twelve cases of phlegmonous tumor of both iliac fossæ, which he observed, and in nine of seventy-three cases which he collected. It appears to be the rule in perityphlitis from exposure to cold or following favorable cases of typhlitis. Induration remains, in some instances, which may become permanent. The career of the affection in such cases is well illustrated by the following:[1]

"Frederick W., aged twenty-six years, admitted to hospital-ship Dreadnaught, January 19, 1863, states that fifteen days ago he caught cold, having slept continuously for two or three nights in a wet berth. The attack commenced by slight cramping-pains in the abdomen and lower parts of the body generally. He was constantly thirsty, could get no sleep, and observed that from the commencement of his illness the bowels were obstinately confined. No remedial treatment was sought for. The symptoms on admission were severe, cramping, abdominal pains, especially marked along the ascending and transverse colon; a defined prominence, simulating a tumor, over the site of the cæcum, with dulness on percussion, and marked tenderness on pressure; no fæces had been passed for fourteen days; the tongue was dry and slightly furred; pulse feeble and frequent. He slept very little, but there was not any marked anxiety of countenance. He lay on his back, with some inclination to the right side. The patient was ordered a linseed-meal poultice to the abdomen, a full dose of opium at night-time, and milk and beef-tea diet.

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[1] Reported by Mr. Ward, in the *Lancet*, January 9, 1864.

"*January 20th.*—Pain continues, and there is no relief from the bowels. The urine has passed twice only in twenty-four hours, but in sufficient quantity. Twelve leeches ordered to be applied over the cæcum, preceded by simple enema, and the opium to be repeated at night.

"21*st.*—Leeches appear to have afforded some relief. There is still tumefaction over the cæcum, but the tenderness and tenseness are less. Two scanty fluid stools passed during the day, containing very little fecal matter. The poultice to be continued, and half a grain of opium to be given every four hours.

"23*d.*—Pulse 76, feeble; has slept well; has very little pain; no stool.

"25*th.*—One scanty stool yesterday; tongue nearly clean. Opium to be reduced in quantity, and a single enema to be administered.

"27*th.*—No further evacuation; gurgling is detected over the cæcum; the tumefaction is reduced, and there is very little tenderness. Repeat the enema.

"28*th.*—A larger free evacuation, with scybalous masses; there is much less tenderness, with general relief. Enema continued daily.

February 1*st.*—Up to this day there has been no further evacuation of the bowels. A scanty stool, however, on the evening of this day.

"5*th.*—Treatment continued without variation to this date, and the symptoms have not materially altered. Still indistinct tumefaction and tenderness over cæcum; another copious stool was passed during the day. Olive-oil ℥ss daily.

"9*th.*—Three liquid stools during the last twenty-four hours; the patient is perfectly easy, and the tumefaction reduced. More solid diet prescribed.

"10*th.*—Three more stools since yesterday; tongue moist and slightly furred; hot skin; pulse 90; complains of great general debility. Forty ounces of urine daily.

"11*th.*—Four scanty stools during last twenty-four hours; no heat of skin; has slept well; tenderness gone, but still some tumefaction. Ordered quinine and iron, and iodine to be applied over cæcum. From this date he rapidly improved, the bowels regained their normal action, and he was discharged quite well on the 23d of February.

In the majority of cases the course of the inflammation is toward suppuration. In most cases, and especially in those the course of which is rapid, this process will be marked by both local and general symptoms. Of these the latter are the more valuable, and consist of increased fever, with irregular chills and sweats at night. The former are increase in the size of the tumor, with augmentation, or appearance for the first time, of the signs of compression exerted by it. Sooner or later, according to the depth of the tumor fluctuation is felt. Now, the history of the disease will vary according to the course which the pus takes. This has been sufficiently indicated. When opening externally is to occur, the tumor increases superficially, and is felt to be approaching the surface, reddening of the integument over the abdominal walls, and sometimes emphysema and œdema of the subcutaneous tissue occur at the point where it will burst. The pus from these abscesses is invariably ill smelling, and often of fecal odor. The foreign body which has perforated may be discharged, and worms may come out alive or dead.[1] When the cæcum has been perforated, escape of fæces occurs, and artificial anus results. This is not common in perforation of the appendix.

Opening internally is marked by sudden decrease in the size of the tumor, or even its disappearance, and the presence of pus in the stools or urine, if the cæcum or bladder has been perforated, or the signs of general peritonitis or empyema, if the peritoneal or pleural cavity has been invaded.

After opening of the abscess, recovery may take place by healing of the pus-cavity, or death may result from exhaustion, due to prolonged suppuration, or from the development of some fatal complication, as peritonitis or empyema, or from hæmorrhage due to erosion of vessels. But, before opening of the abscess, as we have seen, a fatal issue may be due to pyæmia.

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[1] Hernia of the cæcum through the opening has been seen by Blandin. (Collineau. *Gazette Hebdomadaire*, January 17, 1862.)

The time required for the healing of the cavity of the abscess after the opening differs according to the channel by which the pus escapes. When by the cæcum it heals soonest, averaging ten days, though suppuration has been known to be prolonged till the patient was exhausted. When opening externally occurs, the time varies from fifteen days to a month, or even to ten months. It is in these cases that suppuration is oftenest protracted. Fistulæ from an extensive sloughing of the abdominal wall may occur. The fecal abscesses are the slowest in healing. Afterward indurated spots remain in some cases, which generally disappear gradually, but may become permanent, and they have been known to be the seat of a secondary suppurative process similar to the first.

Brief reference should be made to those cases of perforation of the appendix which are followed directly by general peritonitis. Such are by no means uncommon, especially in young subjects. A patient in perfect health, or complaining but little, is suddenly seized with symptoms of acute general peritonitis, and dies in from twenty-four to seventy-two hours. On autopsy no abscess is found, but direct perforation of the peritonæum. Dr. Lewis has collected a number of these cases. According to Dr. Parker, if the patient live over five days, we may infer that adhesions have been formed which will circumscribe the pus till it accumulates in quantity sufficient to break through them.

Diagnosis.—The diagnosis of perityphlitis may offer some difficulty in the early stages of the affection, but, after the characteristic tumor is developed, with the accompanying vomiting, constipation, and other symptoms due to its pressure, we need be in doubt no longer. To distinguish between the different forms of perityphlitis, and between the conditions of the cæcum and appendix which give rise to it, is very difficult and often impossible. An idiopathic perityphlitis will be developed gradually; the pain at first will be deep-seated and dull; there will be no symptoms of intestinal disturbances till the tumor can be perceived by the touch. When in typhlitis the sausage-shaped tumor becomes broader, and the pains begin to extend to the thigh and leg and become more intense in the ileo-cæcal region, the existence of a perityphlitis may be inferred; and on the disappearance of the stagnant fæces the tumor will be felt. Between perityphlitis due to perforation of the cæcum, and that from perforation of the appendix, it is impossible to declare positively. The facts that the latter is by far the more frequent, is generally not preceded by any intestinal symptoms, but occurs suddenly in persons in good health, and is followed rapidly by signs of circumscribed peritonitis and abscess, would lead us to suspect its occurrence. The other condition may be inferred when a patient, who has been troubled with bowel-complaints for some time, is suddenly seized, especially after some violent exertion, with fixed pain in the ileo-cæcal region, and the signs of aggravated intestinal disturbance.

Accumulation of fæces in the cæcum and ascending colon is distinguished by the tumor forming an irregular mass, of sausage-shape, in some cases of doughy or pasty feel, and not at all or but slightly tender to the touch; it disappears spontaneously, or is displaced by the action of purgatives.

In psoas abscess there is no disturbance of the intestines; the pain is deeper-seated, and is not increased by pressure, but by walking, or by moving the body, which is more or less flexed upon the limbs; the tumor is not so circumscribed, its limits are hard to determine, and percussion over it is tympanitic; no fever, and progress very slow.

In perinephritis the tumor is situated originally in the lumbar regions, but may descend to the iliac fossa. The previous occurrence of kidney-disease, or the absence of intestinal troubles, will serve to distinguish it. M. Nélaton has recorded a case of a movable kidney undergoing suppuration, which was supposed to be the tumor of perityphlitis and punctured.

Cancerous disease of the cæcum is rare; "is almost always associated with cancerous deposits in other organs. Its development is very slow, the tumor knobby on its surface; the symptoms of stenosis of the intestines are usually quite marked, and cachexia will soon be found an additional help to clear up the diagnosis."

"*Intussusception of the Intestines.*—It would be found exceedingly difficult to make an exact diagnosis here, if the intussusception and the tumor produced by it were exactly in the ileo-cæcal region; but diarrhœa usually precedes this disease, and blood and mucus will be found in the stools. The signs of occlusion of the intestines predominate at the outset, a symptom which we observe in typhlitis usually not at first, and only in the severer forms of the disease."[1]

After development of the tumor, examination by vagina and rectum should not be neglected.

Prognosis.—Resolution may be expected in cases due to exposure to cold, or those following mild attacks of typhlitis. After formation of the abscess, the prognosis will depend on the course which the pus takes. Opening into the cæcum has been justly regarded as the most favorable result. Of the ten cases above referred to, in which the abscess discharged into the cæcum, nine recovered. Of the three in which subsequent opening occurred externally, two died. The one case, in which opening took place into the cæcum and bladder, recovered, as did also that in which the abscess discharged externally as well as into both cæcum and bladder.

Evacuation of the abscess through the abdominal walls cannot be said to be favorable. Of twenty-eight cases, seventeeen recovered, and eleven died.

Evacuation through the rectum justifies a good prognosis, while about one-half of the cases in which the bladder has been the place of exit have died.

The development of general peritonitis, pyæmia, or empyema, involves an almost inevitably fatal issue.

Perityphlitis due to perforation of the cæcum or appendix is much more serious than that due to simple extension of inflammation. It is worthy of mention that all the cases of peritonitis or pyæmia, in the above collection, were found on autopsy to be due to perforation of the appendix. Of the two cases of empyema, one was due to perforation of the cæcum, the other to disease of the appendix.

Of the sixty-seven cases heretofore referred to, thirty-four recovered. Of the thirty-two deaths (the termination of one case was not ascertained), eight were due to peritonitis, six to pyæmia, two to empyema, two to hæmorrhage from erosion of the internal iliac artery, one to hæmorrhage from incision made to let out pus, and thirteen to exhaustion. The most frequent cause of death is hence seen to be exhaustion, as it occurred in over one-third of the cases. As has been stated, this occurs oftenest in cases in which the abscess opens externally. The large proportion of deaths due to peritonitis and to pyæmia should not be overlooked—one-fourth for the former, over one-fifth for the latter, together equalling that from exhaustion.

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[1] Dr. Weber.

Treatment.—Our knowledge of the etiology of the subject teaches us that we can do much to prevent the development of perityphlitis by careful treatment of the primary intestinal affections. The injudicious use of purgatives in typhlitis, combined with indiscretion in diet and exercise, has undoubtedly been the exciting cause of the secondary inflammation. Hence, in typhlitis, purgatives should be used only in the beginning, before vomiting has occurred; and then only mild remedies should be given. After vomiting has occurred, these should be superseded by enemata. Leeches may be applied, and warm fomentations to keep up the bleeding. Cold compresses are also useful. In no case should the purgatives be continued, but the free administration of opium should be begun to confine the intestines, and continued till all signs of inflammation have ceased. Absolute rest and restricted diet should be enjoined.

We have learned that resolution may be expected in perityphlitis following mild cases of typhlitis, from exposure to cold, or from traumatic causes. Obviously, in these cases the indication for treatment will be to promote absorption. When perforation has occurred, we know that suppuration must ensue, and should be encouraged. But in many cases we shall be unable to determine the causes, and in such, if the symptoms and general condition of the patient indicate a subacute course of the disease, we shall be warranted in attempting to promote absorption. This plan should be pursued only so long as all signs of suppuration are absent. With the first appearance of increase in size of the tumor, or augmentation of its pressure-effects, or increase in the fever with chills or sweats, measures for absorption must be abandoned, and the process of suppuration encouraged. To promote absorption, opium in quantities to confine the bowels should be administered, and leeches, followed by ice-cold compresses, applied over the tumor. Iodine, or mercurial ointment, or extract of belladonna, is used by some practitioners. Absolute rest should be maintained, and the diet should consist of food which will be digested in the stomach. The vomiting may be combated by carbonic-acid water, and the swallowing of small pieces of ice. As in typhlitis, purgatives should not be given. In convalescence the restrictions in regard to diet and motion must be enforced. Fatal relapses have occurred from lack of attention to these particulars. After recovery, over-exercise should be avoided for a time. It has been pointed out, by Dr. Andrew Clark,[1] that during convalescence there is a tendency to the accumulation of fæces, which, if not removed, will do harm. If an enemata prove insufficient, purgatives must be resorted to. Dr. Clark reports a case which illustrates the happy use of these remedies at this time. The patient, a boy, during convalescence, was seized with pain over the site of the tumor, the pulse ran up, and a swelling similar to the tumor appeared. This was regarded as fecal, and castor-oil was given by the mouth and rectum. Large masses of fæces were evacuated, swelling subsided, and the patient recovered.

When suppuration occurs, it must be hastened by warm applications, poultices, etc., to the tumor, and opium and the same general measures should be continued as before. Formerly, this plan of treatment was pursued until the abscess pointed externally, when it was opened or burst in some other direction. Within a few years, however, the practice of opening these abscesses at once, without waiting for the appearance of fluctuation, has been adopted by Prof. Willard Parker, of this city, and employed with success by himself and others.

The propriety of the early opening of these abscesses was discussed by the earliest writers on this subject. Dupuytren was averse to the operation because of the frequent occurrence of opening into the cæcum and its happy results. Grisolle favored it, as he observed that two of ten cases, in which opening into the cæcum occurred, ended fatally, and that evacuation of the pus by the natural passages was often followed by external opening and death. Velpeau advised early evacuation of these abscesses, and Battersby, in his complete review of the subject of iliac abscesses, recommends it. Dr. Martin, of Lyons, in 1835 advised the application of caustic potash. The safety and advisability of the operation were demonstrated even in the last century; for Bourienne[1] relates a case, in which a surgeon, under the impression that an abscess existed in the lower part of the abdomen, cut down to evacuate the pus, but found none. He was laughed at by his colleagues, and was much chagrined, but the next day a free discharge took place through the wound, and the patient recovered. Later, Dr. Hancock[2] cut down over a tumor in the right iliac fossa, and let out some pus and turbid serum, and recommended a similar procedure in all such cases. Notwithstanding these proofs of the safety of the operation and its recommendation by so many writers, it does not seem to have been resorted to; at least we find no record of cases treated in this way until Dr. Willard Parker called attention to it. He reasoned that Nature attempted to effect a cure, first by setting up an adhesive inflammation to confine the accumulating pus, and then by giving vent to it through the process of ulceration. The danger was, that, before he latter process was completed, pus would have burst through the abscess-walls. By opening the abscess early, the surgeon could supersede Nature. The operation was not dangerous in itself, and even if the diagnosis was incorrect no harm would be done. The truth of these views and the advantages of the operation were demonstrated by Dr. Parker by a case which he treated successfully in this way.

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[1] *The Doctor*, London, May 1, 1871.

Further study of the disease gives us additional and even stronger reasons for the adoption of this plan of treatment. When the abscess opens externally, we find the danger to life from exhaustion to be extreme. Even when the pus has been discharged into the cæcum, suppuration has been prolonged till death ensued, and subsequent opening either externally or into other organs has occurred, with fatal result in one-half the cases. Pyæmia is seen to be a not infrequent complication, doubtless induced by the thrombosis of large veins encroached upon by the growing abscess. Empyema from perforation of diaphragm, fatal hæmorrhage from the erosion of large blood-vessels, perforation of almost every hollow abdominal and pelvic viscus, are all complications which arise from allowing these abscesses to run their course unmolested; all may be avoided by giving vent to the pus before it accumulates in sufficient quantity to render liable the occurrence of any of them. Other writers have since advocated this plan of treatment. Dr. Stiegle ("Würtemburg Corres.," Bl. xi.–26, 1870)[1] reports two cases, and urges the necessity of its adoption, especially in view of the dangers from pyæmia and hæmorrhage. Dr. Weber, in an article on abscess of the appendix vermiformis, recommends its employment, and gives a successful case.

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[1] *Vide* Battersby ("Literature").

[2] *Lancet*, September 30, 1848.

While the number of cases reported to have been treated in this way is small, the results are extremely gratifying. The brief statement of each case (p. 263) will suffice.

Of these six cases, in which, on the evidence of the symptoms and the presence of the tumor, and without perceptible fluctuation, the abscess has been opened, five have been followed by recovery. In the one fatal, the patient was exhausted before the operation was resorted to. Had it been attempted earlier, we can but think that recovery would have ensued. No more satisfactory results than these could be desired.

The knife is undoubtedly the best instrument for evacuating these abscesses. The plea for the use of Vienna paste is, that it avoids opening the healthy tissue. Dr. Weber's case shows us that this may be avoided, and the purpose of the operation be accomplished. Puncture with the trocar is open to the objection of the uncertainty of penetrating the abscess, which is illustrated in Case V.; it affords no opportunity, as does the knife, of investigating the condition of the surrounding tissues, and neither allows so free an escape of pus, nor relieves the tension of the abscess-walls so completely. The

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[1] Schmidt's "Jahrbücher," 1871, vol. iii., p. 308.

No.	Age, etc	History.	Operation.	Result.	Operator.
I.	M., 40	Patient confined to bed on fourth day of attack with nausea, constipation, pain and circumscribed tenderness in right iliac fossa. Symptoms increased in severity till 9th day, when abscess was opened.	Incision 6 in. long, parallel to Poupart's ligament, over middle of iliac fossa. Fascia transversalis found thickened, and under it a fluctuating tumor. Exploring needle brought up pus, and 4 ounces were evacuated by free incision. Tent placed in wound.	Recovery—wound closed in 3 weeks.	Dr. Parker — (*N. Y. Med. Rec.*, March 1, 1867).
II.	......	Patient confined to bed on second day with abdominal pain, especially severe in right iliac fossa, with tenderness. On 12th day fever and chills. A tumor, non-fluctuating, felt in right iliac fossa. On 14th day operation.	Incision 3 in. long over tumor, the central portion extending through muscles and fascia transversalis. Exploring needle brought up bloody serum, and pus followed. Wound enlarged and tent introduced.	Recovery—wound closed in 5 weeks.	Dr. Parker — reported by Dr. Burge, *N. Y. Med. Rec.*, June 1, 1867.
III.	M., 22	On 3d day of attack constipation, stercoraceous vomiting and signs of local peritonitis in right iliac fossa. Tumor perceptible on 6th day. Incision on 7th day.	Operation similar to preceding. Fascia transversalis healthy, and no fluctuation detected. Tent left in centre of wound; on 2d day abscess burst through wound. On 16th day fecal concretion escaped.	Recovery—wound closed in 6 weeks.	Dr. Weber—(N. Y. Med. Jour., Aug., 1871).
IV.	F., 24	Patient had perityphlitis for 6 weeks. A hard tumor existed in right iliac fossa, extending to lower border of ribs, and to 2½ in. of umbilicus. No fluctuation. Patient already exhausted with fever and chills.	Incision as in ligature of external iliac artery; fluctuation felt, and pus evacuated.	Recovery—wound closed in 8 days. Induration remained.	Dr. Stiegle (*Schmidt's Jahrbücher*, 1871, III., p. 303).
V.	......	Two months from beginning of attack, a tumor, of size and shape similar to that in preceding case, was found—tender on pressure. Patient was exhausted with fever and sweats. A trocar was thrust to depth of 2½ in. without obtaining pus. Eight days later, signs of infarction of right lung. A second puncture with trocar let out bad-smelling pus.		Death from bursting of abscess of lung. No autopsy.	
VI.	M., 30	A hard tumor perceived in right iliac fossa on 7th day. Symptoms aggravated. On 14th day, indistinct fluctuation.	On 14th day Vienna paste applied; 24 hours later pus escaped, with fecal concretions and curdled milk; 10 days later drainage-tube introduced.	Recovery.	Dr. Kottman (*Schmidt's Jahrbücher*, 150, p. 37).

narrow tract left by the trocar offers little opportunity for the escape of a concretion compared with the free opening made by the knife. It would be well to evacuate the pus with the aspirator before resorting to cutting operation. By repeating the puncture the accumulation of a dangerous quantity of pus could be avoided, and, if the abscess finally showed no signs of healing, incision should be made.

After opening the abscess, the opium should be continued, and rest enjoined. The patient should be nourished with the blandest articles of diet. Violent exercise should be avoided for some time after the healing of the wound.

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ART. III.—*Of the Use of Chlorate of Potash and Glycerine Injections for the Ulcerations in Chronic Dysentery.* By THEODORE MEAD, M. D.

PROBABLY one of the most intractable of the various diseases that afflict humanity is chronic dysentery. It will, undoubtedly, take a prominent place in the medical history of the late civil war, as far as camp-diseases are concerned. The disease is essentially a chronic ulceration of the mucous membrane of the rectum and colon, and may continue the entire length of both, but is usually confined to the former. Ulcerations may, however, exist in the smaller intestines, but with these I have nothing to do at present, nor with any of the ulcerations produced by scrofulosis, cancer, or as sequelæ of syphilis.

The disease in the first instance is undoubtedly produced by some irritant coming in contact with the part, after the general health has been undermined by the acute dysentery, or it may be by typhoid fever; and I deem it not impossible for the ulcerations to be superinduced by any disease that may depress the general health, together with the application of the irritant.

This irritant may be any thing that will induce an inflammation of the mucous membrane. Probably the acrid secretions of the intestines themselves produce more cases than all other causes. Violent and long-continued purging with drastic cathartics may prove the cause; corrosive sublimate is also mentioned as a possible cause. It may, perhaps, be a question whether the ulcerations of Peyer's patches in enteric fever can result in chronic ulceration of the large intestine. Whatever may be the cause, the subsequent history is the same. The ulceration that takes place in the first instance is substantially the same as that we sometimes see in the mouth and fauces, produced by some disorder of digestion or other cause, and would be equally amenable to treatment could we but make the same direct application of our remedies, and prevent the continued presence of the original or some other irritant. The subsequent history of the ulcerations in the two locations, provided there be no medication, is very different. Those of the mouth will probably recover, while those of the colon and rectum will probably continue to grow worse.

This tendency is probably the result of the bad condition of the general health, the presence of unhealthy acrid fæces, the nervous irritation of the inflammation, the frequent desire to go to stool, and tenesmus; the straining and contractions of the muscular coats of the intestine causing the rubbing together of the diseased and other portions of the bowel, thus increasing and spreading the ulcerations by the application of the diseased secretions to the otherwise healthy tissue. Sometimes the ulcerations, after a variable length of activity, seem to pass into a state of quiescence, and their surfaces become covered wi[illegible] a whitish membrane. During this state of quiescence, the patient often deceives himself into thinking he is getting the better of the disease; but, in a short time, owing, as he supposes, to some indiscretion on his part, either in exposing himself or indulging his appetite, he finds himself worse off than before. This attack, however, is produced by a renewed activity of the ulcers, without throwing off the membranes that have been formed over them, but by breaking either through them or by their sides. After another time of activity, they again become quiescent, and other covering membranes are formed over the first. The disease thus goes on, the membranes continue to thicken, until the patient dies from the continued drain on his system, or is cut off by some intercurrent disease that under ordinary circumstances might be of but little moment. I have seen the coats of the colon and rectum from one-fourth to a third of an inch in thickness at the seat of ulceration, where the patient had died of this disease.

The treatment in this condition, usually recommended, consists in the use of opium, quinine, iron, alcohol, bismuth, astringents, a strict diet, etc. With what success these remedies have been used, let the tombstones and hospital death-records report. That medicine given by the mouth can have any decidedly remedial effect upon the ulcerations of the colon or rectum, is extremely questionable, and especially if the remedy be nitrate of silver, sulphate of copper, or any simple astringent.

Flint says ("Practical Medicine," third edition): "Chronic dysentery is one of the most intractable and hopeless of diseases. . . . The treatment of chronic dysentery relates first to the local affection. Remedies to allay irritation and to promote the healing of ulcerations are indicated. But, unhappily, in the great majority of cases, there is very little probability that a cure will be effected, and all that can be hoped for from judicious treatment are palliation of symptoms and prolongation of life."

The ulceration itself is purely a local disease, and should be treated locally, and, instead of astringents, a stimulant to the mucous membrane should be used. The objects of treatment should be to heal the ulcerations, and to induce such a healthy action of the part as to throw off the whitish membranes that have been formed over them. The remedies that have been found efficient in ulcerations of the mucous membrane of the mouth, etc., should, by a reasonable inference, be equally efficient for ulcerations in any other part of the alimentary tract. And such I have found to be the fact.

My treatment is, to inject into the bowel half a drachm of chlorate of potash rubbed up in half an ounce of glycerine, and mixed with three to four ounces of warm water, two or three times a day, the patient to be confined to the bed, with instructions to hold the enema as long as possible. The first injection will not be held over half a minute, and not that length of time if the rectum be much affected. But in a few days the trouble in this respect will be greatly overcome, and, as the ulcerations heal, greater tolerance of the medicine will be evinced. After these injections have been used for from seven to ten days, the whitish membranes and *débris* of the ulcers, provided it be an old case, will be passed with the stools, looking like scraped lint. This occurred in the first case I had, to the no small surprise of my patient. The general health of the patient, of course, needed continued attention, and such medication as the case indicated was prescribed.

The two following cases I give as showing the result of this method of treatment:

Case I.—Came under treatment June 4, 1868. D., aged twenty-seven years, light, fair complexion, light-colored hair, hazel eyes; formerly of Connecticut, and colonel of one of its regiments of volunteers during the late war. Was first attacked in July, 1861, while on duty with his regiment in Virginia. Afterward ordered to South Carolina, where he remained on duty until his health completely failed, and he was forced to resign and return home. From the time of his attack until I took charge of his case he had been under the care of good physicians, and had undoubtedly received the benefit of the best treatment as laid down by our authors. He informed me, however, that he had not had a natural stool since his first attack, and that all the effect the medicines seemed to have was simply to keep him alive. The amount of medicine that he had taken was astonishing, and especially so as he had lived through it all, saying nothing of the ravages of the disease. And, as may be supposed, his faith in the medical profession was as near *nihil* as possible, so far as his own case was concerned. At this time, June 4, 1868, he was having from twenty to thirty stools in the twenty-four hours, was in a very weak, anæmic condition, with hardly strength enough to stand alone. His muscles were atrophied and flabby, the skin dry, pulse very weak, and in all respects he appeared incapable of living more than a week. The general appearance of these patients just before death is too well known to need any further description of this one, as he was in all respects a typical and a classical case.

I commenced the use of the injections at once, prohibited the use of opium and whiskey, which had always been ordered him in great quantities during the whole of his sickness, and were doing him much more injury than benefit. Subnitrate of bismuth, in forty-grain doses, suspended in mucilage, three times a day, with quinine, iron, strong beef-tea, beefsteak, eggs, etc.; in fact, gave him the most powerful diet as to kind and quantity he could take, and leave the least amount of *débris* to pass the intestines. The injections at first were returned as soon as thrown up, but produced a decided impression upon him. It seemed to him, he said, "as though they would take his breath away," and the pain for some time was intense. But, in a short time, the unpleasant sensations became less prominent, and, although it was several days before he could hold the injection for an hour, yet the tenesmus and desire to go to stool, together with the passage of mucus and pus, were all most sensibly improved within a very few days, and at the end of twelve days the stools were reduced to eight or ten in the twenty-four hours. He continued to improve in all respects until his health was restored, except a partial cirrhosis and functional disorder of the liver, produced by the long-continued use of alcoholic liquors that had been prescribed for him. There was a good deal of tenderness of the bowel, which continued for nearly two years, but, up to the present time, he has had no return of his old trouble that could not be completely controlled by hyoscyamus and tannate of bismuth, and has had no return of dysentery for at least two years. His stools are natural in all respects, his appetite good, and his diet as miscellaneous as one need wish. He was under treatment three months before he was able to resume his duties at the office and work all day.

Case II.—Came under treatment December 7, 1869. On the 6th of August preceding he was attacked with bilious fever, from the effects of which he suffered for a long time. On or about the first of September, he was attacked with dysentery, but it did not at any time assume the characteristics of an acute attack, but seemed to supervene on the weakened condition left by the fever, and assumed from the first the chronic type. His treatment for the dysentery had been sulph. cupri, opium, and tonic remedies, the details of which he could not fully remember. His medicine had been given by the mouth, and he informed me that he had not perceptibly improved since the first, but was getting weaker every day, and did not expect to live long at the best.

He was in a very weak, anæmic condition, hardly able to walk, having six to eight stools per day; pulse weak, skin dry, and a pale, cadaverous look. He had had a good deal of sickness before his attack in August, had been a hard-working man, and completely broke down his health in the army. His dysentery was complicated with chronic rheumatism, which gave considerable trouble throughout the whole treatment. The ulcerations in this case, I believe, extended nearly to the junction of the ascending and transverse colon. He said that, every time he had a stool, the sensation produced throughout the length of the colon, from the sigmoid flexure to the point above indicated, was the same as would be produced were two raw surfaces rubbed together.

The treatment in this case was substantially the same as that pursued in the other, in regard to the injections, except that I added some opium, as I did not think that the ulcerations could be so deep, or the coats of the bowel could be as thickened as in the former case, and therefore the opium would not produce sufficient drying of the mucous membrane to interfere with the healing process set up by the potash and glycerine; subnitrate of bismuth in large doses, together with tonics, a generous diet, milk-punch, and perfect rest, completed the treatment. Having always been a temperate man, unused to spirituous liquors, he received the full benefit to be derived from the use of alcohol. The effect of the injections was similar to that in the first case, except that they did not act so promptly in arresting the number of stools; this I account for from the fact that, in the first case, the symptoms did not indicate that the ulcerations extended farther than the sigmoid flexure, and were nearly all confined to the rectum; and in the latter case they must have been nearly all located within and above the sigmoid flexure. The shock to the system, and pain experienced when the injections were first used, were intense, and completely prostrated him. This, however, soon improved, and he made a good recovery, and is to-day enjoying good health, without the least trouble from the dysentery. He was under treatment two and a half months before he returned to duty in his office.

The history of these two cases, before I commenced their treatment, was derived from the patients themselves. They are both intelligent men, have some knowledge of medicine, and are perfectly trustworthy in all their statements.

I am well aware that it is not safe to draw conclusions from a few successful cases treated in a different method from that advised by the standard authors; but, when they admit that their method nearly always proves fatal, we are certainly justified in endeavoring to discover some new plan, "and when found make a note of it."

ART. IV.—*On the Application of Electricity to the Central Nervous System. A Reply to the Objections of Anstie, Brown-Séquard, Cyon, and others.* By A. D. ROCKWELL, M. D., Electro-Therapeutist to the New York State Woman's Hospital.

IT seems to be the fate of electro-therapeutics, in spite of its great and growing popularity, to be met at every stage of its advance by severe opposition. We do not deprecate this; we believe rather that here, as in every branch of science, conflict is to be courted more than feared, and that the discipline and exercise and watchfulness that are required to provide for and overcome opposition will tend to make the growth of electro-therapeutics more healthful and more permanent. At the present time, every special advance or attempt at advance on the part of electro-therapeutists encounters the same kind of difficulties that beset its birth and infancy—with this difference only, that now they are overcome much more speedily. The processes of opposition, and the laws by which it develops, are the same now as they were one hundred years ago.

The same objections that are now brought against central galvanization, general faradization, electrolysis, localized galvanization of the nerve-centres, and to the use of electricity in certain special diseases in medicine and surgery, have been successively brought against peripheral faradization and galvanization in the treatment of paralysis. Among those physicians who sympathize with civilization and the nineteenth century, opposition to the direct treatment of paralyzed muscles by faradism or galvanism has long since ceased. Similarly the present reigning opposition to other methods of using electricity and their application to disease, after having run its course and completed the work which it was appointed to do, that of compelling the pioneers in electro-therapeutics to be cautious and persevering, will, in its turn and in due season, pass away and be forgotten.

The most important objections to the different methods of electrization are just now directed against the treatment of the nerve-centres, and especially the brain and sympathetic.

Dr. Anstie, who is a very strong friend of electro-therapeutics in general, in his excellent work on neuralgia, speaks of galvanization of the cervical sympathetic as a method to be either avoided or used with very great caution, and, in support of this view, adduces a case in his own practice. In a review of Tibbetts's little "Hand-book of Medical Electricity," Dr. Anstie repeats this caution, and expresses apprehension lest great injury may follow the use of this method of treatment. The error of Dr. Anstie consists, not in enjoining caution, since this is needed in all electrical applications, but in suggesting the idea that galvanization of the cervical sympathetic is a dangerous procedure, likely to produce serious results. Quite recently Dr. Brown-Séquard, in a foot-note to one of his series of very able papers, speaks as follows:

"Recently, some bold physicians have tried to galvanize the cervical sympathetic nerve. This I did once in 1855 on my eminent friend Prof. Ch. Rouget, to try to relieve him from a most violent headache.

"The effect was all we could desire against the headache; but the galvanic current, acting at the same time on the sympathetic and the vagus (the simultaneous excitation of these two nerves cannot be avoided), produced such a dangerous syncope, that I promised myself that I would never try again to apply galvanism to the cervical sympathetic of man."[1]

The best reply to objections of this nature, coming from men who are justly distinguished in the departments to which their lives are devoted, is found in the *argumentum ad hominem.*

Dr. Anstie highly recommends hypodermic injections of morphine in neuralgia.

If, now, we should say to him that we knew of a case where an injection of morphine had almost instantly caused most alarming symptoms, and of another case where it had apparently caused death, consequently we had resolved never again to use that method of treatment, he would reply that hypodermic injections had been tested for years at the hands of many of the best physicians of our time; that those who are most familiar with them are usually the most attached to them; and that, when properly administered with the caution that all potent remedial measures demand, and the skill that only experience can give, they need seldom or never do serious harm; and that the infinitely small chance of their doing harm, when thus properly used, is so far overshadowed, by the infinite relief which they unquestionably do afford, as to be hardly worthy of consideration in the practice of those who have made themselves familiar with their administration.

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[1] *Archives of Scientific and Practical Medicine*, p. 92, No. 1, 1873.

Dr. Brown-Séquard has, among very many other researches, deserved well of the profession for having given an explanation of the action of ergot on unstriped muscular fibre, and for having, on the basis of this explanation, suggested the value of that remedy in congestion of the spinal cord.

If, now, we should say to him that there are cases where, with well-defined symptoms of hyperæmia of the cord, ergot at once aggravates the symptoms, we should but state the truth of our experience. He could reply, however, with perfect justice, that just as there are those in whom a single strawberry will cause most disagreeable symptoms, or those to whom a mouthful of mutton is a mouthful of poison, just so there are those who, whatever their disease may be, cannot bear ergot; but that, when wisely used by those who know what they are about, it is a remedy of vast and various efficacy.

For hypodermic injections of ergot, substitute galvanization of the cervical sympathetic, and our reply is complete. There are those to whom electricity, however administered, is a perfect poison, and who were not born to be treated by this most potent of remedial agents. There are those who can bear it in wellnigh limitless doses.

There are those who can bear it and who are benefited by it, but only when given with delicacy and great caution. Now, it is possible to galvanize the cervical sympathetic in all three classes, except the first, without doing any serious injury, permanent or temporary.

All our most potent remedies are dangerous when used dangerously.

The most recent and most radical objection to galvanization of the brain comes from Dr. E. Cyon,[1] of St. Petersburg.

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[1] "Principes d'Électro-thérapie." Paris, 1873, pp. 190–196. This treatise, which was written in 1868–'69, is of necessity considerably behind the

In attempting to reply to his objections, we are reminded of a remark once made by one of our most eminent medical authorities: that "there is a tendency in this country to accept with deference any new theories, provided they come *from a great distance*." The objections brought by Cyon are so stale and so inconsistent, and withal have been so often refuted by practical experience, that if brought by any one residing in our midst they would not be regarded as worthy of consideration. His objections to the method of galvanization of the brain introduced by Remak (not to our method of *central galvanization*, which is a method radically different) are these:

1. That a current of sufficient strength to penetrate and affect the portions of the brain that are most liable to disease, as the corpora striata, optic thalami, and pons Varolii, cannot be applied to the head without doing more harm than good by also irritating other parts.

2. That the cases which have been treated by this method have been so carelessly and unscientifically studied, and so recklessly reported, that they have no scientific value. He states that electro-therapeutists profess to make precise diagnoses of the seat of brain-diseases, and then treat them by galvanization of the brain, combined with various other remedies, and the results, if favorable, are published forthwith. Dr. Cyon goes on to say that such in general is the value of the observations that are given as proofs of the curative effects obtained. This statement we believe to be thoroughly untrue. What is true of certain Germans and Russians is not true of all, if indeed of the majority of electro-therapeutists. The therapeutics of galvanization of the brain have been studied by men who have been trained to the habit of close and discriminating observation; who recognize and bear constantly in mind the enormous complications that beset all therapeutics;

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times. It discourses upon certain questions of electro-physics, physiology, and therapeutics, in a philosophical manner, although on all points in which he is correct he has been anticipated long ago by other writers. The errors and defects of the work, which are very conspicuous in the chapter above referred to, are indirectly the result of narrow or insufficient practical experience, and utterly incorrect notions as to the therapeutical action of electricity.

who have worked under the gaze of watchful skeptics, and with the everlasting motto, *post hoc ergo propter hoc*, incessantly ringing in their ears; men, too, who have carried conscience into science, and have reported the results to the world just as they were revealed to them.

It is of very little practical consequence whether these effects already alluded to are due to the direct passage of the current through the brain or to the reflex action of the current on the brain through the sensory nerves. Reflex action comes in to explain the therapeutic effects of electricity, however and wherever applied. Granting for one moment, what is not true, that mild currents cannot penetrate the brain, this would be no reason whatever for abandoning the electrical treatment of the brain so long as experience shows that benefit is derived thereby. It is, however, not true that mild currents do not penetrate the brain. The experiments of Burckhardt and Ziemssen, with which Cyon seems not to be familiar, have shown very clearly that the galvanic current can be sent through the parts of the brain that we chiefly desire to affect by comparatively mild external applications.

These experiments were made with a very delicate reflecting galvanometer—needles connected with which were inserted into the brain through the skull—while the galvanic current was applied externally.[1]

But even were Cyon correct in his physical and physiological theories, he is not warranted, on the strength of those theories alone, in recommending electro-therapeutists, who are every day relieving and curing patients by galvanizing the brain, to abandon that method. Therapeutics is one science, physiology is another. Of all the sciences, physiology is the least exact, and, until some genius shall arise who shall do for it what Newton did for celestial dynamics, it must remain inexact. Pathology, which, as has been well said, is but the shady side of physiology, is also inexact. If we know not the nature of life, we cannot know the nature of death. Only so far as physiology, which deals with life, becomes exact and complete, can pathology, which deals with the various degrees of death, become exact and complete. On both of these sciences we should hold our opinions as a Bedouin Arab holds his tents, ready to be up and off at a moment's warning.

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[1] These experiments are recorded in Ziemssen's "Electricität in der Medicin," fourth edition, 1872, erste hälfte, pp. 27–39.

Therapeutics, then, which is a science of experience, cannot be thoroughly taught in the laboratory of the physiologist or pathologist. Physiology and pathology, which are now but masses of rapidly-accumulating facts and theories, at best partial, one-sided, and ill-defined, and oftentimes erroneous, where each new doctrine swallows up its predecessors, to be in turn devoured by the doctrines of the future, cannot furnish a basis for rational electro-therapeutics. Hence our objections to the statement reiterated in books, in lectures, and in journals, that electro-physiology must be the basis for all electro-therapeutics.

If it depended on electro-physiology for its existence and advancement, electro-therapeutics would die, and with little hope of resurrection. For what, indeed, do we know of electro-physiology?

Even the researches of Du-Bois Reymond on animal electricity are already losing ground, and high authority declares that the so-called muscular current is a myth.[1] We know more of the physiological action of electricity on the body than of the physiological action of our most used internal medicines, but our knowledge is not enough to make a satisfactory basis for the science of electro-therapeutics. If there is any thing in the world that electricity can do, it is to relieve pain, but how could such power be predicted from our present knowledge of electro-physiology and pathology? We find by experience that it *does* relieve pain, and then by physiology and pathology try to explain as best we can *how* it does it.

The method of using electricity that we have devised and employed during the past three years, we have termed central galvanization,[2] to distinguish it from the five other methods of using electricity. This method, when employed by those who have become familiar with it, is absolutely safe, and should never cause, even in the most impressible, effects either dangerous or alarming. Moreover, this method is incomparably more efficient as a tonic remedy in diseases of the central nervous system, than any localized treatment of those parts.

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[1] We refer to the researches of Prof. John Trowbridge, of Harvard University. *A résumé* of his experiments and his conclusions, obtained from correspondence and from abstracts of papers that have been published by him, have already been presented to the Electro-Therapeutical Society of New York, and will in time be published.

[2] This method was described in a general way in the *Medical Record*, December 15, 1871, and in full detail in the NEW YORK MEDICAL JOURNAL, October, 1872, and was illustrated by cases in the same journal, May, 1873.

The objection urged by Cyon, that, because we cannot tell the precise seat of the lesion, therefore we should not attempt galvanization of the brain, is unworthy of a practical therapeutist.

That we cannot always and truly tell the exact seat of the lesion in many diseases of the brain, those who know most of nervous diseases will be most ready to concede; but in galvanizing the brain it is not necessary to know the precise pathology. The healthy as well as the diseased parts of the brain may be traversed by the current with benefit.

The tendency of electrization, as of other tonic remedies, is to restore diseased parts to health, to make strong parts still stronger.

The best results of electrical treatment are not obtained by confining the direct action of the current to the seat of the disease, but by a subdivision of central, general, and peripheral treatment. In hemiplegia, for example, depending on one-sided cerebral lesion, much benefit is derived from faradization of the paralyzed muscles, some benefit from galvanization of the brain and of the cervical sympathetic, and very great benefit oftentimes, especially in the debilitated, from general faradization and central galvanization, and the best results of all may appear when all the different methods have been employed. If we refuse to galvanize the brain, because we do not fully understand its physiology and pathology, we must, to be consistent, reject the medical use of electricity in every mode of application. While we probably know more of the action of electricity on the body than of the action of almost any other remedy, we do not know enough to determine with certainty just what its precise, complete, and ultimate action is in any disease or on any part of the human system.

We do know by experience that, when properly applied to the body in some one of the half-dozen different general methods now employed, it relieves pain, induces sleep, and improves local and general nutrition as no other single remedy can do, and on the basis of this experience, rather than on the physiological basis, we employ it.

Meanwhile, it is certainly proper to extend, so far as possible, our knowledge of physiology, pathology, and of physics also, so that we may perhaps explain our therapeutics and make it more scientific.

Pushed to their necessary conclusions, the arguments of Cyon would not only deprive the world of electro-therapeutics, but of therapeutics of every form, and even of hygiene itself. If physicians must wait for physiology and pathology to attain exactitude; if we must know just where medicine goes when it enters the system, and just what it does when it gets there; if we are to abstain from treating any disease whose pathology is not fully revealed; and if we are to be required to limit the action of our remedies solely to the part that is diseased, then we have only to close our medical schools, our offices, and our drug-shops, surrender our diplomas, and in a body attend the funeral of the science of medicine.

Among other statements of Cyon to which exception may be taken, is the following:

He says that Smee's battery is not adapted for electro-therapeutics, and that the faradic current should not be used on the spine. In the face of the facts that the patients cured or relieved by Smee's battery may be numbered by tens of thousands, and that the faradic current in the hands of hundreds of physicians is every day applied to the spine with less risk of causing injury than if the galvanic current were used, and sometimes relieving spinal symptoms more successfully than the galvanic, a formal reply seems needless.

Who could tell beforehand, without experience, whether opium would produce sleep? Who could predict that arsenic would act as a tonic, and is there a living man who knows how it so acts? How long would it have taken physiology and pathology to have discovered the uses of ninety-five out of a hundred of the remedies in daily use for the relief and cure of disease?

It is experience that has given us these remedies, and it is experience that perpetuates their use among men of science, while physiology and pathology are slowly helping us to use remedies more intelligently.

Just as therapeutics in general, based on experience, is far in advance of physiology and pathology in general, so electro-therapeutics, also based on experience, is, we are happy to say, far in advance of electro-physiology and electro-pathology.

For those who are entering upon the study of electro-therapeutics, the following suggestions, based on the above remarks, may perhaps appropriately be offered:

1. That they make themselves masters of electro-physics, especially of those principles and laws that directly or indirectly have a practical bearing on electro-therapeutics. Electricity in its physical relations is a study of great difficulty, but it is as enticing as it is difficult, and will, for its own sake, and without reference to its practical application, repay the most studious attention. But, whether attractive or not, the principles of electro-physics must be mastered by those who aspire to mastership in electro-therapeutics. A knowledge of physiology and pathology, however profound, will not supply its place. Many, if not most, of the discouragements of those who begin the study of electro-therapeutics, are the result of a defective knowledge of the physical principles of the general science of electrology.

In the construction, modification, repair, and management of batteries and electrodes, and in the endeavor to understand the countless and complex phenomena of electro-physiology and therapeutics, we stand in constant need of clear ideas on electro-physics.

2. That they do not allow themselves to be carried away by the specious but utterly erroneous notion that electro-therapeutics must be based on electro-physiology. We have been taught in certain quarters that electro-therapeutics is the daughter of electro-physiology; it would be more just to regard the two sciences as sisters of pretty nearly the same age. The best growth and development, however, has thus far been obtained by electro-therapeutics.

It is well to acquire and compass the fragmentary facts that make up what is known as electro-physiology, and by experiments on animals and on the human subject, living and dead, to confirm or correct what are supposed to be its laws. But in electro-physiology the facts and science of to-day may be the fallacies and superstitions of to-morrow. To build on such a foundation is to build on sand.

3. To remember always that the basis of electro-therapeutics, as of all other therapeutics, is *clinical experience.* He who attempts to build on any other foundation must surely fail. The most that physiology can do for electro-therapeutics is to guide, to explain, to illustrate, to confirm.

4. That they think and experiment independently for themselves on this subject, and be not cowed by distant authority.

Bibliographical and Literary Notes.

ART. I.—*Contributions to Practical Surgery.* By GEORGE W. NORRIS, M. D., etc. 8vo, pp. 318. Philadelphia: Lindsay & Blakiston, 1873.

THIS volume consists of several essays, the greater number of which have been published in the *American Journal of the Medical Sciences*, and are now collected in book-form for ready reference.

The first article, "On the Occurrence of Non-union after Fractures," revised for present use, embraces a great amount of research (mostly among the older authors), and is the most exhaustive article on the subject with which we are familiar.

The second paper is "On the Treatment of Deformities following Unsuccessfully-treated Fractures."

The next article, on "Statistics of Fractures and Dislocations treated in the Pennsylvania Hospital, during the Twenty Years from 1830 to 1850," is of no special value to the general practitioner at the present time, as it does not mention the latest approved methods of treatment. The account, however, of dislocation of the astragalus, and dislocation of the head of the humerus, complicated with fracture of the neck, is very interesting and practical. In case of the former, excision is usually deemed necessary.

The article entitled "Compound Fractures" appears to be recently written for the book. The rules governing amputation at the time of injury are, in the main, good; but we cannot withhold criticism upon some other rules for procedures given. On page 186, with reference to hæmorrhage, it is stated:

"Should the artery divided be superficial, or the wound large and of recent occurrence, the application of a ligature to both ends of the vessel is required, but when the bleeding vessel is deeply seated, or the wound small, or several hours have elapsed since the occurrence of the injury, and great swelling be present, it is better to proceed at once to secure the main vessel of the extremity."

Ligature of the main artery is also recommended for secondary hæmorrhage in certain cases not requiring amputation (p. 204). The rule of modern surgery is imperative to tie the artery *in the wound*, enlarging it if necessary, whatever be its condition, or the length of time that may have elapsed since the injury; however difficult the task, the surgeon's duty is to seek *the vessel which bleeds*, and tie *it* at both cut extremities. Under the head of "Cases requiring Secondary Amputation," in compound fractures, the question of amputation in traumatic gangrene is discussed. The author states (p. 203): "I have always myself waited for a line of demarcation, and as yet have seen nothing that would lead me to deviate from this practice." This practice is not in accordance with the advice of most authorities, and we are of the opinion that nearly every case of spreading gangrene not operated on early will end fatally, excepting, perhaps, the gangrene occurring from frost-bites, and that commencing in a toe or finger, and which spreads slowly. The judicious advice is given to operate "without any delay" if the operation is determined upon. Dr. Norris is not especially favorable to the immovable apparatus in this class of injuries. In this connection the name of Hamilton is conspicuously omitted.

The "Statistical Account of the Cases of Amputation performed at the Pennsylvania Hospital, from January 1, 1850, to January 1, 1860," is valuable, also the "Statistics of the Mortality following the Ligature of Arteries," although not embracing the operations during the last eighteen years. The report of the cases of ligature of both carotids is open to criticism, in that some cases are omitted, and others are added with questionable propriety.

The volume is closed with a report of a case of "Varicose Aneurism at the Bend of the Arm."

The book is valuable as a work of reference.

ART. II.—*Insanity in its Relations to Crime. A Text and a Commentary.* By WILLIAM A. HAMMOND, M. D., Professor of Diseases of the Mind, etc., etc. 8vo, pp. 77. New York: D. Appleton & Co., 1873.

THIS attractive volume discusses insanity from a medico-legal stand-point, and advances some of the most common-sense ideas respecting the accountability of those affected with "emotional" insanity of any with which we have had the fortune to meet.

The author takes the ground that some of the insane are withheld from crime through fear of punishment. "It is certainly reasonable," he says, "to believe that individuals, aware of their irresponsibility, would be capable of exercising a measurable control over their actions and impulses." Again, the author says of those who have not yet given positive evidence of insanity: "Let them understand that insanity does not necessarily license an individual to do what he pleases without punishment, and a power is brought to the aid of their wavering intellects which may turn the scale definitely in their favor. It is not only for the sake of society, therefore, that insane criminals should be punished, but for the sake of other insane who are not yet entirely deprived of responsibility." Dr. Hammond is of opinion, therefore, that, so long as death is the legal punishment for the crime of murder, certain classes of the insane should be put to death for the commission of that crime. In other cases he would have the punishment apportioned to the offence, always bearing in mind the character of the insanity. It is recommended, however, that separate prisons should be provided for insane criminals, where they could at the same time be subjected to suitable punishment, as of labor or simple confinement, and receive humane treatment with a view to improving their mental condition.

We entirely agree with the author in the belief that no one who has ever committed a murder under the influence of a delusion should again be let loose upon society.

We are glad that Dr. Hammond expresses himself unmistakably in regard to the absurd doctrine that an individual can be entirely sane immediately before and after any particular act, and yet insane at the instant the act was committed. "Such a doctrine," he says, "is contrary to every principle of sound psychological science."

Besides recommending this suggestive little work to the profession, we think, if it could be placed in the hands of every newspaper editor, and every lawyer, and every clergyman in the country, clearer ideas of the responsibility of those affected with the different forms of insanity would soon be entertained.

ART. III.—*A Treatise on the Principles and Practice of Medicine; designed for the Use of Practitioners and Students of Medicine.* By AUSTIN FLINT, M. D., etc. Fourth edition, 8vo, pp. 1070. Philadelphia: Henry C. Lea, 1873.

PROF. FLINT, in the fourth edition of his great work, has performed a labor reflecting much credit upon himself, and conferring a lasting benefit upon the profession. The whole work shows evidence of thorough revision, so that it appears like a new book written expressly for the times.

The most notable changes are upon those subjects relating to general pathology, kidney-diseases, and more especially diseases of the nervous system; the general plan of the work, as heretofore adopted, is pretty generally adhered to.

In discussing the etiology of "tubercle," the author holds to his former view of its being an exudation or deposit depending upon a special dyscrasia (with which we are in accord), dissenting from the modern theory of its inflammatory origin; admitting, however, that miliary tubercle may be produced by the absorption of degenerated yellow tubercle and other morbid products.

"Carcinoma" is still thought to originate in a special dyscrasia, in opposition to the advancing opinion of its local origin.

"Pyæmia" is supposed to be induced by the absorption of pus, more especially by the liquor puris, although the corpuscles are thought to undergo changes not observable by our present means of determining, "septicæmia" being described as a separate affection. We have heretofore discussed this question,[1] expressing the opinion that the pyæmic state is due to the absorption of septic material rather than to the presence of pus in the blood.

The *germ-theory* of the causation of contagious and infectious diseases is favorably mentioned.

The changes noticed in the description of individual diseases are such as to elevate the book to the highest level, but to analyze the questions of present interest would lead us far beyond the space allotted for a general notice. The recent advances made in the study of diseases of the nervous system render the section on that subject, although condensed, of especial interest at this time.

For the general practitioner and student of medicine, we cannot recommend the book in too strong terms. Being written in a style devoid of criticism except in the mildest terms, its freedom from hobbies, the clear and concise discussion of the leading opinions of the day, and the acceptance of results with the reserve due to the conclusions of a calm, deep thinker, rather than by jumping at them with a positiveness characteristic of one of superficial ideas, all render it a safe book to follow. The *treatment* of disease recommended is especially to be commended.

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[1] *Vide* number of this JOURNAL for June, 1878, notice of Erichsen's "Science and Art of Surgery."

ART. IV.—*Clinical Lectures on Diseases peculiar to Women.* By L. ATTHILL, M. D., University of Dublin, etc., etc. Second edition. Philadelphia: Lindsay & Blakiston, 1873.

THE high reputation enjoyed by the author of this little volume entitles it to the attentive consideration of all who are interested in the large class of diseases of which it treats. The leading features of the work are a general conservatism of tone and a freedom from theoretical views unsupported by facts and experience. The small size of the volume precludes the expectation of any thing like a complete treatise on diseases of women, though the author gives an outline of nearly all the affections met with in daily practice, with suggestions that will prove useful to students and younger practitioners.

The principal points to which we take exception are those pertaining to the examination of patients. Digital examination can certainly be made more satisfactorily by placing the patient on the back than on the side; while, in ocular examination, the advantages of Sims's speculum are so obvious to those familiar with its use, that we are surprised to find the author giving the preference to the old-fashioned cylinder of Fergusson. The flexible probe is also of far greater value in diagnosis than the unyielding sound.

The method recommended of plugging the vagina, for the control of hæmorrhage, is by no means the easiest or most efficient. We object also to the severity of some kinds of treatment advised, as the introduction and retention in the cavity of the uterus of solid nitrate of silver; nor, do we think as lightly as the author seems to do, of the cellulitis that will sometimes result therefrom. We believe that the desired object can be more safely and more surely attained by milder measures. On the whole, however, the author's treatment appears to us judicious, and we believe his opinions may be read with profit by all classes of the profession.

ART. V.—*Clinical Electro-Therapeutics, Medical and Surgical: A Hand-book for Physicians in the Treatment of Nervous and other Diseases.* By ALLAN MCLANE HAMILTON, M. D., etc. 8vo, pp. 184. New York: D. Appleton & Co., 1873.

THIS work is "the compilation of well-tried measures and reported cases," enriched by the author's experience, and is well adapted for the general practitioner, for whose use it is intended. It furnishes, in a condensed form, all the important points necessary for the management of nervous diseases, according to the present state of knowledge upon the subject. The author has "not mentioned several new modes of application, only because they have not been sufficiently tested." The reported cases are quite illustrative, occupying as little space as is consistent with clearness.

Static electricity is said to have "little value in the field of electro-therapeutics." We might mention that some authors[1] are very favorable to its employment in certain cases in hospital practice.

The surgical portion of the work is well considered, especially the chapter on "Electrolysis."

The latest devised American instruments are described, and an appendix is added, furnishing rules for the management of batteries, formulæ for solutions, etc., etc. There is no index to the volume.

BOOKS AND PAMPHLETS RECEIVED.—Hand-book of Physiology. By William Senhouse Kirkes, M. D. Edited by W. Morrant Baker, F. R. C. S., Lecturer on Physiology, and Assistant-Surgeon to Saint Bartholomew's Hospital, Surgeon to the Evelina Hospital for Sick Children. With Two Hundred and Forty-eight Illustrations. A new American from the eighth enlarged English edition. Philadelphia: Henry C. Lea, 1873.

Special Rules for the Management of Infants during the Hot Season, recommended by the Obstetrical Society of Philadelphia to the Thoughtful Attention of the Mothers in Philadelphia. Philadelphia: Collins, Printer, 705 Jayne Street, 1873.

The Journal of Anatomy and Physiology, conducted by G. M. Humphry, M. D., F. R. S., and William Turner, M. B. Second Series, No. XII., June, 1873. Macmillan & Co., Cambridge, London, and New York.

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[1] *Vide* "A Hand-book of Medical Electricity." By H. Tibbits.

Observations on the Surgical Treatment of In-growing Toe-nail. By George Stillwell, Surgeon, Epsom. With a Pamphlet, by Dr. Cotting, Boston. London: J. & A. Churchill, New Burlington Street, 1873.

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College of Physicians and Surgeons, New York. Medical Department of Columbia College. Sixty-sixth Annual Catalogue and Announcement. New York, 1873.

Transactions of the Medical Association of Georgia, at its Twenty-fourth Annual Meeting, held in Atlanta, Georgia, 1873. Atlanta: W. R. Barrow, 1873.

Annual Announcement and Catalogue of the College of Physicians and Surgeons of the Syracuse University, for the Session of 1873–'74. Syracuse, 1873.

Transactions of the Medical Society of the State of West Virginia. Instituted April 10, 1867. Wheeling: Frew, Hagans & Hall, 1873.

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Translations.

Lectures upon Diseases of the Nervous System. Delivered at La Salpêtrière, by M. Charcot. Reported and published by Bourneville. Translated by H. D. Nicoll, M. D., New York.

Lecture I.—*Disturbances in Nutrition, resulting from Lesions of the Nerves.*

Gentlemen: It is never without emotion, but at the same time always with great satisfaction, that I, each year, inaugurate the lectures we are about commencing. I always recognize among you the familiar faces of former pupils, some of whom have already given indication of the brilliant careers they are certain to accomplish. Their presence here is most pleasing to me; and I am happy to express to them my grateful appreciation of their good-will. The large number of pupils before me to-day is convincing proof that I was not in error when, five years ago, I thought this great emporium of human misery, in which we are now assembled, must surely become the source of most useful didactic and clinical instruction.

Without doubt, gentlemen, the field of observation open to us does not embrace every division of pathological anatomy. But, in reference to the branches of it which do come under our notice, our material is very abundant. We may study, on the one hand, the affections incident to old age, which will merit a large share of our attention. Then, there are furnished to us a great number of chronic diseases, under conditions most favorable for their analysis—diseases (so common, and therefore so important to the physician) of the nervous system and locomotor apparatus, whose pathology has begun to emerge from the profoundest obscurity within only the last twenty years. For myself, gentlemen, I have never doubted La Salpêtrière was destined to become a school of invaluable instruction in the diseases of advanced life and in many chronic affections. For the realization of this high destiny, it was necessary only to make certain modifications in the interior arrangements of the establishment. The required alterations, I am happy to-day to announce to you, have now been accomplished. By a decree, for which we did not make application, a service of nearly one hundred and fifty beds has been given us for the study of all the varied forms of hysteria and epilepsy. Nor is this all: M. le Directeur de l'Assistance Publique has decided to establish in this hospital a service especially devoted to chronic diseases, with a ward for the temporary reception of patients, where they may be treated. When all these advantages for study become fully organized, I do not hesitate to assert that we shall have in Paris an institution almost without a possible rival, in reference to clinical instruction and scientific investigation in these diseases. I trust we shall very soon see this realized in all its particulars. And, should circumstances, which no one can foresee, call me elsewhere, it will still be to me a great happiness to see my successors crown the edifice whose first foundations only I was permitted to lay.

But, gentlemen, your time is precious, and I do not wish to prolong unbecomingly my preamble; we must turn to the special object of our lectures. I propose this year to discuss particularly those diseases of the nervous system (and more especially those of the spinal cord) which come under our observation most frequently in this hospital. I do not desire, at the outset, to consider the purely technical details, preferring rather to direct your attention to matters of more general interest, and which will meet us at every turn in the progress of our studies:

I. Lesions of the cerebro-spinal axis frequently react upon remote regions of the body, producing, through the medium of the nerves, various disturbances in nutrition. These secondary affections compose a most interesting pathological group. I shall, therefore, occupy several lectures in describing to you the principal features in their history. These consecutive lesions may be developed in almost every tissue, and may appear in most distant portions of the body, as, for example, *the skin*, *the subcutaneous cellular tissue*, *the muscles*, *the articulations*, *the bones* even, and, lastly, *the viscera.* In their primary stages they usually present the characteristics of an inflammatory process. They frequently play, however, a secondary part only, in the morbid process, being simply superadded to the ordinary symptoms, hyperæsthesia, anæsthesia, hyperkinesis, akinesis, motor incoördination, etc. But, if merely because of their interest in a physiologico-pathological point of view, they ought not to be overlooked.

Formerly these lesions possessed great clinical value, because of the severe disorders they occasioned, as well as on account of the important diagnostic and prognostic indications they furnished. Permit me to illustrate this by citing a few examples.

I showed you last year (and I shall again allude to this point), that a slough upon the nates, developed in the progress of apoplexy from cerebral hæmorrhage, or softening of the brain, afforded an almost absolutely certain prognostic indication. These sacral sloughs, or the affections of the kidneys and bladder, which are produced so rapidly in certain acute diseases, or during exacerbations in some chronic affections, are very often the immediate cause of death.

An *arthropathy*, developed in the progress of a locomotor ataxia, will deprive the patient entirely of the use of an extremity which would otherwise have long continued to be of service to him.

Sometimes, finally, these secondary trophical lesions deceive the practitioner, being regarded by him as the primary disease: for example, certain forms of progressive muscular atrophy were, until recently, considered to be primary affections of the muscles, while their point of origin really is found in certain changes in the gray matter of the cord.

To multiply examples would be superfluous, for you already appreciate the interest which the study of these trophical lesions possesses. Lesions in the nutrition of remote portions of the body and of the viscera, under certain morbid influences, are not determined solely by the brain and spinal cord. These centres share this responsibility in conjunction with the nerves which emanate from them. But, in spite of some specific dissimilarities, the diseases resulting from these primary lesions, developed in portions of the nervous system most widely separated from each other, possess very strong analogies; so that the question of locating the seat of the original affection becomes often a very difficult one. Bearing this thought in mind, I do not wish to limit our studies to the trophical lesions of cerebral or spinal origin merely. These latter may be, if you choose, our principal object; but, I believe it will be profitable for us to contrast them with disturbances in nutrition, arising from lesions of the peripheral nerves. The method of study by comparison is, moreover, most serviceable in bringing out strongly the points of contrast. In order, therefore, to limit the range of our studies, let us confine ourselves to those disturbances in nutrition which take place in the *peripheral portions of the injured nerves*. Those changes in nutrition which manifest themselves in acts of reflex nature, at a greater or less distance from the nerve affected, and in the domain of nerves which have been subjected to no direct injury from the primary lesion, present a most attractive subject for study, but one which must be studied by itself.

II. In hearing me speak of the disturbances in nutrition which result from lesions of the nerves or nervous centres, doubtless the majority of you are reminded of the corresponding problem of normal physiology which is now under discussion.

I hope to be able to demonstrate to you, that *nothing in pathology is better established than the existence of these disturbances in nutrition, following upon lesions of the nerves or nervous centres.* And, in addition, you know very well the most advanced physiologists teach that, *in the normal condition, the nutrition of the various portions of the body is not essentially dependent upon the influence of the nervous system.*

The contradiction seems evident—it is, however, only apparent. This I shall attempt to prove; and, therefore, ask permission to make a short incursion into the domain of experimental physiology. In order to demonstrate that the chemical acts which constitute nutrition are not under the immediate control of the nervous system, arguments of various kinds are resorted to:

1. The most complicated acts of the nutritive process are accomplished in certain organisms without the intervention of a nervous system. Vegetables, and some of the inferior orders of animals, though entirely devoid of nervous system, nevertheless have an active vitality. In like manner, the human embryo performs acts of organic life at a period when it does not possess the vestige of a nervous element.

2. It is urged that, even in the superior animals, there are certain tissues totally without nervous vessels (e. g., the epithelial cells, cartilages, etc.), in which, under pathological conditions, a veritable proliferation occurs—a very strong proof that nutrition is being carried on in a most vigorous manner.

3. Finally, the most forcible arguments are derived from experimental physiology. You are aware that, after section of the spinal nerves, or, after destruction of the cord, remote organs, as the muscles, or bones of an extremity, continue to live for a long time, and to be nourished nearly as in the nor

mal condition of the parts. Usually, it is only after the lapse of time that changes in the nutrition of these organs occur. These changes, besides being almost always purely *passive*, are evidently caused by the inaction to which the parts are subjected, from the withdrawal of all influence upon the part of the nervous system. In a word, they present the same characteristics as are found in *immobility* of the extremities, where the nervous system is not directly implicated. These passive lesions, which we shall see in many paralytic affections, have nothing in common with the special trophical lesions that are about to engage our attention. They may be distinguished from the latter, objectively, by some particular traits. The latter lesions are almost always characterized, at a certain period in their development at least, by phlegmatic irritation. Most usually, from the very commencement, they manifest inflammatory symptoms; which may terminate, as we shall see, in ulcerations, gangrene, and necrosis. Moreover, the rule is, that these results take place with great rapidity after lesions of the nerves, or of the nervous centres, which have caused their appearance. Thus it is that, in certain cases of fracture of the vertebral column, with compression and irritation of the cord, we frequently meet with sloughs upon the nates upon the second or third day subsequent to the accident.

We may, then, state that, as a general rule, the contrast is very striking which exists between the *passive lesions* resulting alone from functional inactivity and the *disturbances in nutrition* following upon certain lesions of the nervous centres. The former develop slowly, and have usually no inflammatory character; the latter, as a rule, appear very quickly, and present, at least in the commencement, symptoms of a phlegmatic process, more or less pronounced.

Permit me, gentlemen, to recall to your mind, very briefly, some of the experiments to which I alluded a short time since, and which tend to prove that the spinal cord and nerves have no direct, immediate influence upon the nutrition of the remote regions of the body:

1. The first experiment relates to section of the *sciatic nerve* in mammals. Schroeder van der Kolk, who was among the

foremost to perform this experiment, believed that the absence of the influence of the nervous system, occasioned by the division of this nerve, was the cause of the disturbances in nutrition which occurred so rapidly in the corresponding extremity. M. Brown-Séquard, who, in 1849, repeated this experiment on Guinea-pigs and rabbits, was led to regard these disturbances in nutrition, appearing at the end of several days, and consisting in tumefaction of the limb, ulceration of the toes, loss of the nails, etc., as due to the animal's inability to escape from the action of external influences, as the rubbing upon the hard, rough floor of the extremity deprived of the power of motion and sensation by section of the sciatic nerve. When the animal was surrounded by all the requisite precautions, confined in a box, whose bottom was thickly covered with bran, etc., there was no longer any change in the nutrition of the paralyzed limb, excepting a greater or less degree of atrophy, which developed very gradually.

The atrophy following section of the sciatic nerve evidently results from the functional inactivity to which the paralyzed limb becomes subjected; it takes place not alone in the muscles, but also in the integument, and in the bones, as I. Reid had already demonstrated. It does not occur, however (according to the physiologist just quoted), even when the division of the nerve has been complete, if the galvanic current be daily made to pass through the muscles of the paralyzed limb.

2. Complete section of the trifacial nerve, within the cranial cavity, furnishes results parallel to those produced by division of the sciatic nerve. You are aware that the optic lesions, occurring after this operation in animals, were formerly regarded by some physiologists as due to the suppression of the trophical influence of the trifacial. But, since the experiments of Snellen (1857), and more recently those of Büttner (1862), these lesions are referred to the effects of the anæsthesia which renders the parts deprived of sensibility liable to injury from all kinds of traumatic causes. If, after section of the trifacial, we protect the eye, as Snellen did, by covering it with the ear of the same side of the head, or, as Büttner did, by placing a piece of thick leather over it,

no disturbances in the nutrition of the cornea appear. In these instances, a certain degree of neuro-paralytic hyperæmia of the iris and conjunctiva is the only phenomenon observed.

3. It seems at present to be established that complete transverse section of the spinal cord, or even destruction of a certain portion of it, when not followed by inflammation of the cord, does not immediately occasion disturbances in the nutrition of the paralyzed extremities. M. Brown-Séquard has proved that the ulcerations, which appear so rapidly in the neighborhood of the genital organs of mammals and birds, which had been subjected to complete transverse section of the cord, are not due directly to the absence of nervous influence, but are the result of prolonged contact of decomposed urine and fæces, to which these parts are exposed. The posterior extremities of a kitten, which survived nearly three months the complete destruction of the lumbar portion of its spinal cord, developed in a normal manner; the functions of organic life in its extremities seemed to be fulfilled in accordance with physiological laws; and the growth of hairs and nails took place as in a healthy animal. Mammals and frogs, in which the posterior portion of the spinal cord has been destroyed, retain until death (according to Valentine) the electric contractility in the muscles of the posterior extremities.

To recapitulate: in animals which have undergone complete transverse section of the spinal cord, or destruction of a portion of it, ulcerations and even sloughing of the tissues take place, especially at points where pressure is made. It is always possible to refer these lesions to the anæsthesia, and to the motor paralysis resulting from it. The animal is constantly soiled by contact with his excrements, wounds himself by knocking against every protruding surface, etc., etc. The atrophy, which gradually takes place in the extremities paralyzed by the operation, is occasioned (as in the case of section of the sciatic nerve) by the functional inactivity to which the limb is condemned.

From these facts, borrowed from experimental physiology, we learn that cessation of the action of the nervous system, brought about by complete section of the peripheral nerves, or by destruction of a portion of the spinal cord, does not cause disturbances in the nutrition of the anatomical elements of the paralyzed limbs, other than would be occasioned in these same elements by prolonged inactivity under the influence of functional inertia alone.

The discovery of vaso-motor nerves, and of the effects of paralysis of these nerves, would not essentially modify this fact. It is practically demonstrated to-day that the neuro-paralytic hyperæmia, to however great an extent it may exist, is never of itself sufficient to cause any alteration in the nutrition of the tissues. Without doubt, as M. Schiff has shown, this hyperæmia creates a certain predisposition to inflammation in the animal operated upon; which may develop spontaneously (or at least apparently so), or, it may result from exciting causes, which, in healthy animals, would be very slight. But these disturbances in nutrition of neuro-paralytic origin are in no particular comparable to the trophical lesions which are the special object of our study; they compose a separate category. These latter, as we shall many times have occasion to tell of, usually originate and pass through their various stages, without being either preceded or accompanied by any of the objective phenomena which reveal the existence of paralysis, or the inverse condition of the vaso-motor nerves. For the present we will not dwell at greater length upon this point, to which we will, however, recur later in the course.

III. If the lesions which occasion the destruction or suspension of the action of the nervous system are incapable of giving rise, in the remote regions of the body, to disturbances in nutrition, other than those which result from prolonged inactivity, *the same is not true of the lesions which cause, either in the nerves or in the nervous centres, an exaltation of their functions, an irritation, an inflammation.* This is a proposition of the greatest importance. It comprises, in reality, the entire question we are considering. Unless I am mistaken, the principle upon which it rests, although advanced long ago by M. Brown-Séquard, is still very often misunderstood, as well by physiologists as by pathologists. We shall see, as we progress, that human pathology furnishes many proofs, many convincing arguments, in support of this proposition; while rarely only will we be compelled to refer to the results of experiments upon the lower animals.

Doubtless the chief reason of this is found in the fact that in animals, much more than in man, the nervous tissue seems to resist the various causes of irritation and inflammation. Every experimenter knows that even very grave traumatic lesions of the peripheral nerves, or of the spinal cord, in a majority of the lower animals, produce with great difficulty a myelitis, or neuritis of very short duration, and not at all comparable to those which develop very easily in man after very slight lesions.

The special experiments are, as we have said, few in number, which show that irritative lesions of the nervous tissues are capable of occasioning various trophical disturbances in the regions which they supply. They relate almost exclusively to the fifth pair.

In the first place, allow me to give you a *résumé* of an experiment of Samuel, which, for some reason unknown to me, is ignored in the greater portion of the treatises upon physiology. Two needles are inserted into the Gasserian ganglion of a rabbit, and the induction current applied. Instantly contraction of the pupil, more or less pronounced, takes place; and at the same time the vessels of the conjunctiva become slightly injected, and the secretion of tears is increased: the sensibility of the lids, conjunctiva, and cornea, is heightened. After the operation the contraction of the pupil continues, though less in degree; the hyperæsthesia of the eyes still persists. The inflammatory process usually commences to be evident at the end of twenty-four hours, increasing in intensity throughout the second and third days, and afterward diminishing progressively. Every degree of ophthalmia may occur, from the mildest form of conjunctivitis to the most severe blenorrhœa. Sensibility is always exalted; the hyperæsthesia may become so great as that general convulsions follow upon the slightest touch of the eye. General opacity of the cornea exists, and sometimes, in addition, several small ulcers, or a single oval ulcer, occupy the centre of the cornea. In one instance, a small collection of pus formed in the anterior chamber. Aside from the hyperæmia, no pathological changes have ever been observed in the iris, neither adhesions nor modifications in color. In every case, hyperæsthesia of the ophthalmic branch of the fifth pair is expressly noted. Hence, as in the cases of Snellen and Büttner, it is evident that we ought not to refer to the *anæsthesia* in order to explain the appearance of disturbances in nutrition in eyes not properly protected.

Following incomplete section of the trifacial in a rabbit, Meissner has observed very strongely-marked trophical lesions in the eye, which had otherwise preserved its sensibility. The author directs attention to the fact that *these lesions arose without having been preceded by any symptom of neuro-paralytic hyperæmia.* The autopsy showed that the middle (internal) portion only of the trifacial had been affected by the neurotomy. Moreover, in support of Meissner's observations, Schiff reports four cases bearing upon these partial lesions of the trifacial within the cranial cavity, and in which inflammation of the eye took place in spite of the continuance of sensibility. In Samuel's experiments we have several disturbances in the nutrition of the eye produced by faradaic irritation of the fifth pair: is it not probable that, in Meissner's cases, the ocular lesions resulted from the phlegmatic irritation, developed in the nerve in consequence of its incomplete section? In favor of this view, I recall to your minds the fact that, in the human subject, incomplete section of a nerve is much more likely to be followed by an irritative process than is a complete section. It is reasonable to suppose that, at least within certain limits, the same thing is true in animals.

I shall now cite several facts observed in the human subject, and to which I shall again have occasion to allude. They have reference to the trifacial. They demonstrate, like the preceding ones, that irritative lesions of this nerve, spontaneously developed, may, without being succeeded by anæsthesia, give rise in the eye to very well-marked trophical disorders.

A woman, fifty-seven years old (whose history has been reported by Bock, *Ugeskrift, for Laegre*, 1842, vii., p. 431), had been troubled for about a year with violent pains in the right side of the face, which, intermittent at first, later became almost constant. Sensibility of the face never entirely disappeared; a gentle pressure would scarcely be felt; but strong pressure excited the severest pains. The conjunctiva of the right eye was injected; the lower portion of the cornea presented an hypertrophic ulcer, about two lines long; slight opacity throughout the entire membrane. Later, the ulcer became deeper, and the opacity increased until, finally, perforation took place, giving escape to a puriform liquid. Death occurred unexpectedly. At the autopsy, the Gasserian ganglion of the right side was found to be very voluminous and hard. The three branches of the right trifacial, as far as the foramina, were also very much thickened.

The next case is taken from a paper of Friedrich. A man, aged sixty-five years, was suddenly seized with hemiplegia and loss of sensibility of the right side. Several weeks previously he had experienced slight lancinating pains in the ball of the left eye and in the left side of the face. These pains increased in intensity, especially subsequently to the apoplexy. At the same time there were injection of the conjunctiva of the left eye and increased secretion of tears. Somewhat later, here and there upon the conjunctiva, a pseudo-membranous, puriform exudation appeared; the left pupil, although very much contracted, reacted under the influence of light. Sensibility in the left side of the face was always normal. At the autopsy was found, upon the surface of the middle peduncle of the cerebellum, a mass of small sarcomatous tumors, about the size of a hazel-nut. The adjacent portions of the brain, especially of the cerebellum, were softened and highly injected. The trifacial, at its point of exit from the cranial cavity, was red, somewhat softened, and flattened by the tumor.

Many similar facts might be related; but these are sufficient for the purpose we have in view.

It is still less common to find experimental lesions of other nerves (than the fifth pair) occasioning disturbances in the nutrition of distant organs. We remember, however, as an example of this kind, the remarkable effects sometimes produced in the nutrition of the kidney after injury of the nerves which supply that organ. It is well known that some experimenters (Krimer, Brachet, Muller, Peipers, A. Moreau, Wittich) almost

always succeed in producing greater or less changes in the kidney by means of these lesions, while others (P. Bert, Hermann), who repeat the same experiments under apparently precisely similar circumstances, obtain negative results only. Is it not possible to explain, at least in part, this singular contradiction in the following manner? Renal lesions did not result in those cases in which the section of the nerves was complete, absolute: but, when the division of the nerves was incomplete, they were produced, or rather, might have been produced; or, again, when, instead of the scalpel, caustics were used, as ammonia (Corrente, Schiff), all of which are conditions highly favorable for the development of more or less severe irritation, or even a true phlegmatic process, in an injured nerve. In this point of view the question is, perhaps, worthy of further consideration, with the aid of new experiments.

We were speaking a little while ago of the effect produced upon the nutrition of parts deprived of sensation and motion by a transverse section, or partial destruction, of the spinal cord. We stated that when the operation did not result in establishing an inflammatory process in the injured portion of the cord (which, however, does result, in the vast majority of cases), we simply find in the paralyzed extremities a degeneration with muscular atrophy, very gradual in its development, cutaneous ulcerations, perhaps sloughs even, caused by rubbing against rough surfaces, constant contact with decomposed urine and fæces—in a word, we find only the results of functional inactivity of the posterior extremities in animals, and nothing besides.

The picture is entirely changed, if, in consequence of circumstances which nothing foretold, and which it would be impossible to reproduce at will, an inflammation is set up in the neighborhood of the spinal injury. Then, as M. Brown-Séquard has shown, and as I have several times seen, the muscular alterations take place very rapidly—a few days only sufficing to make them very evident. Soon emaciation of the muscles becomes recognizable, and advances very rapidly. Eruptions, quickly changing into ulcerations or sloughs, appear upon the skin (even when the greatest attention is paid to cleanliness), choosing by preference the regions of the body subjected to pressure or rubbing, or to prolonged contact with the urine; but they do sometimes appear without the influence of any of these conditions.

I could easily extend my remarks upon these disturbances in nutrition in connection with traumatic lesions of the spinal cord in animals. But it will be more proper to revert to them when studying myelitis in the human subject spontaneously developed. Besides, I am unwilling to unnecessarily prolong this incursion into the domain of experimental physiology. For the moment, unless I am mistaken, we have obtained an important result, viz.: the facts we have given are sufficient to establish that *failure to act on the part of the nervous system* has no direct, immediate influence upon the nutrition of remote organs; on the other hand, it makes it at least very probable, that the morbid *excitation, the irritation* of the nerves, or nervous centres, are of such nature as, under certain circumstances, to occasion all manner of disturbances in the nutrition of remote organs.

What is the mechanism, by means of which this irritation of the nervous system is enabled to react upon remote organs, and produce in them these trophical changes, of which we have just related several instances? Are they duo to an irritation, or a paralysis of the vaso-motor nerves? or do they depend upon an irritation of those hypothetical nerves, not yet recognized by the anatomists, which we sometimes designate by the name of *trophical nerves?* These questions we will discuss farther on. At present our purpose is to enter the field of human pathology; and I hope to be able to demonstrate to you that the principle aleady elicited from experimental pathology applies here with still greater force. This principle will be our guiding-string, which, I hope, will lead us to understand why the lesions, which, at first sight, seem to be the same and to bear upon the same points of the nervous system, or remote organs, produce in pathological cases such opposite and apparently contradictory effects.

The disturbances in nutrition, which we intend to review, are produced: 1. By lesions of the peripheral nerves; sometimes these lesions are of traumatic origin, sometimes they are spontaneously developed. 2. By lesions of the spinal cord and of the bulb. 3. And, lastly, by lesions of certain portions of the encephalon.

DISTURBANCES IN NUTRITION CONSEQUENT UPON LESIONS OF THE NERVES.

Let us consider, in the first place, lesions of the nerves; as they furnish the most simple conditions for study. In this connection surgery supplies us with most valuable information; for traumatic lesions of the nerves sometimes occur in the human subject under conditions so simple as to be quite analogous to those of the experimental lesions in animals.

A. At the outset, I shall make a distinction, which I believe to be fundamental in these traumatic lesions of the nerves, and the great importance of which you will soon recognize: 1. Sometimes the injury consists in a complete section of the nerve; and then its results are merely, in a general way, those occasioned by the absence of nervous influence. 2. Sometimes resulting from injuries, contusions, or gunshot-wounds, a state of irritation is produced in the nerve; it is then, and then only, that those disturbances in nutrition take place, to which I have directed your attention. Let us first consider the facts belonging to the second group.

These traumatic lesions of the nerves may give rise to morbid phenomena affecting the skin, the subcutaneous cellular tissue, the muscles, the articulations, and the bones. The late American war, as you know, afforded a fine opportunity for very important study on this subject. Messrs. S. W. Mitchell, G. K. Morehouse, and W. Keen, have written a most interesting work on this subject, to which we often refer with profit. We are also indebted to one of my former pupils, the lamented Mougeot, for a very remarkable treatise upon the cutaneous affections, developed under the influence of lesions of the peripheral nerves. I cannot here enter into its details, but refer those of you, who may desire to pursue the matter further, to Mougeot's thesis, in which all the documents bearing upon the question have been most carefully compiled.

a. *Cutaneous Affections.*—The diseases of the skin, which may be produced by traumatic lesions of the nerves, are of two kinds:

1. The first consists of eruptions of various forms, but especially vesicular or bulbous. We instance, in the first place, *zona*, which is often met with in these cases, and which might, therefore, be designated *zona traumatica.* Some time ago, I reported a very striking example of this, which occurred at la Charité, in the wards of my instructor, Rayer. Under the title of *eczematous* eruptions, the American surgeons have described an affection of the skin which simulated the preceding form.

2. Next come the *pemphigoid eruptions*, of which also I have reported a typical case. These consist of bullæ, which develop very rapidly, reappearing from time to time upon various portions of the body, corresponding to the distribution of the injured nerves. They leave behind almost indelible cicatrices. This form of eruption is sometimes seen upon badly-healed wounds, when it is very probably dependent upon an irritation of some injured or compressed nerve-filament in the cicatricial tissue.

3. We notice, in the third place, a redness (reminding one of an erythema pernio) and certain tumefaction of the skin and subcutaneous cellular tissue, already remarked by Hamilton, which simulates a phlegmon.

4. Then follows the cutaneous affection described by the American surgeons under the name of "glossy skin." Here the skin is glistening, pale, anæmic; the sudoriferous glands are atrophied, their secretion diminished; the epidermis cracks; the nails become fissured and bent back in a very peculiar manner. This affection is a peculiar inflammation of the skin, terminating in atrophy, recalling to mind the disease known as *scleroderma.*

b. *Affections of the Muscles.*—The muscles become atrophied, often very rapidly; losing, sometimes partially, sometimes totally, their electric contractility. But, it will be necessary to give this subject our special attention.

c. *Affections of the Articulations.*—In the neighborhood of the joints, traumatic lesions of the nerves occasion symptoms which simulate very closely the physiognomy of subacute articular rheumatism. As a rule, these arthropathies terminate very early in anchylosis.

d. *The Bones.*—Sometimes, under the foregoing circumstances, a periostitis occurs, followed by necrosis.

But, I do not desire to carry this enumeration further; sufficient has been said for our purpose. And we must now endeavor to specify, as far as possible, the peculiar conditions, under the influence of which these disturbances in nutrition arise after traumatic lesions of the nerves.

Paget, who was among the first to call attention to some of these conditions, does not hesitate to confess his ignorance in this regard. The American surgeons, however (to whom I referred a little while ago), have succeeded in finding out these conditions; and their testimony is the more valuable, since it is based upon observation alone, entirely empirical, and free from any preconceived ideas. After stating, in the first place (as Paget had previously seen), that these secondary affections are almost always preceded or accompanied by symptoms of pain (*burning pains*), evidently associated with a state of irritation in the injured nerve, and also, that no anæsthesia exists, they distinctly assert that these affections are usually developed after *contusions*, *punctured wounds*, *incomplete section of the nerves;* that is to say, after injuries most liable to occasion neuritis, or at least a *neuralgic condition.* On the other hand—and this is a point upon which our authors lay great stress—they never occur in cases where he *nerves have been completely severed;* here, the usual results of absence of nerve-force alone are the only phenomena presented.

I must add, finally, that the peripheral affections produced by irritation of the nerves most usually arise spontaneously, without the intervention of any external cause, as, for instance, of pressure.

These are, however, only the most general conditions; we ought to be able to penetrate deeper, to ascertain whether there exists in the affected nerves some constant anatomical lesion, accounting for the presence of the peripheral lesions. Unfortunately, our knowledge enables us only to point out the chasm which, without doubt, future researches will not fail to span. The mass of symptoms always argues in favor of the existence of a neuritis. We can also call to our aid the *post-mortem* appearances in certain cases of organic lesions of the nerves, in which the entire series of peripheral affections, which we have learned to recognize as the result of traumatic lesions, existed. In these cases, which instantly arrest our attention, the affected nerves are sometimes tumefied, infiltrated with exudation, highly congested; besides, the microscope has discovered a multiplication, greater or less in degree, of the nuclei in the substance of Schwann, or of those in the neurilemma, and, at times also, all the characteristics of granular degeneration of the cylinders of myeline. It cannot be proved at present, however, that an irritation, capable of producing trophical disturbances in remote portions of the body, may not exist in a nerve without manifesting itself by this array of comparatively indefinite symptoms. And here is the proper place to state that every neuritis does not necessarily present the evidences of trophical disturbances; in order for their development, the intervention of circumstances, the nature of which we have not yet been able to ascertain, is necessary. This is in decided contrast with our knowledge of the lesions which take place in remote organs after *complete* section of the nerves; these latter may be considered as a necessary and unavoidable consequence of every lesion of the nerves which separates the organs from the influence of the nervous system.

However it may be, the influence of the irritation of a nerve upon the development of these trophical disturbances (which are occupying our attention) is well known, and is made very evident from the observations where this irritation exists, when, after removing for an instant the cause of the irritation, it is reapplied. I will mention a fact, well known and often cited, which Paget reports from Dr. Hilton:

In a patient, at Guy's Hospital, with fracture in the lower portion of the radius, the median nerve had been subjected to compression by the callus formed around the site of the fracture. In consequence of the pressure upon the nerve, there had appeared upon the skin of the thumb and first two fingers ulcerations, which resisted all treatment. Flexion of the wrist, made so as to relax the soft parts upon the palmar surface, at the same time causing a cessation of the compression of the nerve, would always at the end of a few days allow of the healing of the ulcers. But, as soon as the patient began again to use the hand, the nerve became again subjected to compression, and the ulcers would shortly reappear.

B. It only remains for me to describe the disturbances in nutrition, which occur in consequence of lesions of the nerves spontaneously developed, and in no way resulting from a traumatic source. And, in doing this, you will see reproduced that series of affections which we have just now been considering. This fact, therefore, will enable me to be brief. It will be sufficient to cite a few examples taken for the most part from that rich colléction of facts found in the work of Mougeot.

In order to make the transition clear, I will mention, first, those cases in which an influence, not traumatic properly speaking, but yet of a mechanical nature, has determined the affection of the nerve. It is evidently in this latter manner that those trophical troubles of the eye, following lesions of the trifacial nerve, are produced. In these cases, as a rule, we have to do with intracranial tumors developed in the neighborhood of the nerve, and creating, by compression, without interrupting the continuity of the nerve-tubes, a greater or less degree of irritation. Cancer of the vertebral column, as you know, may occasion softening of the vertebræ to such an extent as to cause absorption of the vertebral laminæ, and consequently a contraction of the intervertebral foramina.

The nerves, in their passage through these contracted foramina, become compressed, irritated, and sometimes inflamed. In such a case, I have seen an eruption of zona upon the right side (occupying all those portions of the integument supplied by branches of the cervical plexus), caused by the compression to which the nerve-trunks had been subjected in their passage through the intervertebral foramina. The autopsy showed the cervical portion of the spinal cord and the roots of the spinal nerves to be normal. Upon opening the intervertebral foramina of the right side, the spinal ganglia and nerve-trunks were found tumefied and of a deep-red color. Microscopic examination of the ganglia, as well as of the nerves, showed very considerable multiplication of the elemental nuclei. The corresponding ganglion and nerves upon the left side presented no indication of alteration. M. von Baerensprung has proved that it is very unusual to find a spontaneously-developed inflammation (without the intervention of some mechanical cause) so exactly limited to the spinal ganglia and nerves, and producing an eruption of zona upon the portions of the skin corresponding to the distribution of the irritated nerves. There are many reasons to lead us to suppose that many cases of idiopathic zona are developed in the progress of a neuritis of this kind. The spinal ganglia have been found much altered, without involving the cord, the anterior or posterior parts, and (in the case reported by M. S. Wagner, given below) even the intercostal nerves:

A patient, twenty-three years old, a subject of phthisis pulmonalis, developed an eruption of zona upon the left side of his body, corresponding to the distribution of the ninth and tenth intercostal nerves. At the autopsy the bodies of the last six dorsal and first ten lumbar vertebræ were found to be carious. The dura mater, at the points in relation with the diseased bones, was covered externally by a layer of creamy pus, which was prolonged on the sheaths of the spinal ganglia and nerves. The dura mater was thickened and separated into two layers, especially at the roots of the ninth, tenth, and eleventh dorsal nerves. Although the lesions of the dura mater seemed to be equally pronounced upon both sides, the ninth, tenth, and eleventh dorsal ganglia of the left side only were tumefied, and presented under the microscope appreciable alterations. In these ganglia the nerve-cells had disappeared, and in the immediate neighborhood of the alveoli, in which they had been lodged, were found all the characteristics of a very great proliferation of abnormal connective tissue. In many cases of chronic spinal meningitis with thickening of the dura mater, I have seen an attendant inflammation of the spinal nerves, at their point of exit from the meninges, cause, in distant regions of the body, a greater or less degree of muscular atrophy, and also various forms of cutaneous eruptions; generally, however, zona, or pemphigus, predominates. In a lecture, delivered in Dublin, in 1865, M. Brown-Séquard called attention to the existence of special cutaneous eruptions upon the arms in cases of spinal meningo-neuritis, limited to the inferior portions of the cervical region.

Erythema, zona, muscular atrophy, and, finally, certain arthropathies, have been considered by M. Duménil to be allied to progressive chronic neuritis; and, by M. Lendet, to peripheral neuritis, resulting from asphyxia, by inhalation of carbon.

It is, however, in *lepra anæsthetica* that we find, in the fullest development, the trophical lesions which we have studied in connection with traumatic lesions of the nerves. Then, according to the valuable researches of Virchow, the initial morbid process consists in a *perineuritis leprosa*, characterized by a peculiar proliferation of cells in the interspaces between the nerve-tubes, gradually effacing the tubes. The nerves frequently present throughout their course a fusiform tumefaction, which sometimes may easily be ascertained in the superficial regions during life (in the neck, for example, when the arm is affected), and thus aid in the diagnosis. Early in the disease, these changes produce symptoms of hyperæsthesia, and, later, symptoms of anæsthesia.

I find nowhere mention made of the fact that, in connection with the eruption of zona, we meet with nearly the entire series of the trophical lesions already described: (a.) pemphigus (*pemphigus leprosa*), (b.) *glossy skin*, (c.) muscular atrophy, (d.) periostitis, and finally necrosis. When these latter lesions exist in great severity, we may occasionally have the loss of a portion of an extremity. This often takes place without pain; because, at the time of its occurrence, anæsthesia usually exists (*lepra mutilans*). These various accidents and mutilations have been attributed to the effects of the anæsthesia. This ought not, however, to be considered as the sole cause; it is not only proved that this merely facilitates the operation of external causes, but also that at times it may be of secondary importance, or even altogether excluded, as the cases of Dr. Thomson show, in which anæsthesia was entirely absent.

We have been able only rapidly to pass in review the disturbances in nutrition which are due to irritative lesions of the peripheral nerves. In the succeeding lectures we shall again refer to them, dwelling particularly upon the trophical disturbances in connection with lesions of the brain and spinal cord.

Reports on the Progress of Medicine.

OBSTETRICS AND DISEASES OF WOMEN.

1.—*Record of Fourteen Hundred Midwifery Cases.* By Thomas Savage, M. D., F. R. C. S., Surgeon to the Birmingham Hospital for Women. [Lancet, February 22, 1873.]

The following is a short and rather rough record of 1,400 midwifery cases which have been attended by me in continuous succession, at or nearly at the full term. Of these, 1,437 children were born, viz., 778 males and 659 females. Ramsbotham gives the proportion of males to females as 51.736 to 48.264 per cent. Thirty-five cases were twins and 1 triplets. Of the 1,400 women, 285 were primiparæ, or about 1 in every 5. Nine maternal deaths occurred. Of the children, 1,398 were born alive and 39 still-born, or about 97¼ per cent. alive and 2¾ per cent. still. Ramsbotham gives children born living as 96.3 per cent., and still-born 3.7 per cent. No notes have been taken of the diseases of the puerperal state, though there was the usual complement of such, as milk-fever, mammary abscesses, metritis, ovaritis, parametritis (which occurred in one instance), peritonitis, and the generic disease known as puerperal fever. The diseases of pregnancy were not noted. The effect of sex in children upon their being born alive or still is seen by the fact that there were 39 still-born, of which 21 were males and 18 females. A return has been published showing that they are as 140 males to 100 females. Sir James Simpson says that of the children that die *in utero*, and before the commencement of labor, as large a proportion are females as males; and he gives as his sixth proposition, in his remarks on "Fœtal Dystocia," that of those children who are born alive more males than females are seen to suffer from the morbid states and injuries resulting from parturition.

The average duration of labor may be taken to be agreed upon by all to be longer with males than females. In this series this was not observed, except what appears from the instrumental deliveries, where there were 129 male to 91 female children. The duration of labor is also influenced by the position of the presentation in vertex cases; as, where it was occipito-posterior, of which there were 19 instances, the forceps were used 12 times (6 males and 6 females), and, of the 6 born by natural efforts, 1 was male and 5 female. These instrumental deliveries may be taken as a guide as to duration; for, whatever may be the views of any particular practitioner as to using artificial aid, sooner or later, in the second stage, it would always be the case that forceps would be applied in those that were the more tedious, even though in the one case they were used early, or, in the other, deferred until exhaustion had set in.

Interspersed among these 1,400 cases, but not included with them, were 58 premature deliveries, with 41 male and 14 female fœtuses, 2 being twin cases. Those were called premature where the sex was easily distinguishable, but where the child was not viable, viz., at about or under the 224th day.

There is little to say of the use of ergot. In the earlier cases I used it pretty frequently, and the forceps less; but of late I have almost entirely discarded it as a means of accelerating delivery, having much more faith in the greater certainty and safety of the forceps. A case occurred recently which appeared to justify its condemnation. A woman, in labor with her eighth or ninth child, with dilated os and large, roomy pelvis, was in a state of inertia; the child was distinctly felt by her immediately before her draught of two drachms of ext. ergot. liq. The uterus was almost at once set into contraction, and in about twenty minutes an asphyxiated dead child was born. Of course, these remarks do not apply to ergot as a therapeutic remedy or to its action on the uterine fibre, but merely to its administration before delivery where there is no fear or prospect of hæmorrhage, and where the application of the forceps would at once accomplish delivery.

Chloroform was rarely given in the cases that progressed satisfactorily, except at the urgent solicitation of the patient, although in many of the operative cases, where it was deemed advisable to lessen shock, it was pushed to the surgical degree. When given, it was given pure, and not mixed with either ether or alcohol. There seems to be a very general feeling in its favor in midwifery at the present time. I cannot speak personally very much of it, as I feel a little prejudiced against it, and so have not resorted to it as many practitioners do in the natural cases. I have been inclined to think that it disposes to flooding, and I know this opinion is shared by many.

The vertex presented 1,366 times in the 1,437 births, being, as is well known, far more frequent than any other presentation. It would seem quite impossible to diagnose the exact position of the head, according to Naegele's division, in every case of labor attended, taking them successively, though in many cases it was easily made out, and it was constantly seen that the first position was by far the most frequent, viz., with the long diameter of the head in the right oblique pelvic diameter. In many of the occipito-posterior cases it was difficult to say what caused the delay, when the vertex was at the brim, where the pains were active, and where no great disproportion existed. Of these latter there were 19, 8 male and 11 female children, forceps being used in 12 and craniotomy in 1.

The breech presented 31 times, or about 1 in 47⅜ cases. Dr. Meadows gives their frequency as 1 in 52¼ cases. Of these 31, 24 children (10 males and 14 females) were born alive; and 7 (3 males and 4 females) were still-born. The deaths were therefore as 1 in 3⅓. Dr. Meadows gives them as 1 in 3⅝. The positions, whether abdomino-anterior or abdomino-posterior, were not noted.

The feet presented, one or both, 18 times, or about 1 in 80 cases. Dr. Meadows gives 1 in 90⅓. Of these 18, 11 children (3 males and 8 females) were alive, and 7 (1 male and 6 females) were still-born; the deaths were therefore as 1 in 2⁴⁄₇ cases. The above-named author gives them as 1 in 2⅝ cases.

The shoulder presented twice, both males, alive, after version; the arm once a male, alive, after version; the face seven times—one forceps case and alive, 5 naturally and alive, and 1 forceps case still-born; the funis 4 times, all still-born.

There were 35 cases of twins, or 1 in 40. Dr. Churchill gives 1 in 76½, and triplets as 1 in 6,000. Of these 35 cases 15 were both male children, 7 were both female, and 13 were male and female. This excess of twin males, and of mixed sexes being in excess of twin females, is in accordance with what Dr. Meadows gives in his manual. The delay in the birth of the second child was never allowed to go to any extent, and the forceps, bandage, and ergot, were used to expedite matters in the order named. In 19 of the 35, both the children presented with the vertex, in 6 vertex and breech, in 7 the vertex and foot, in 1 both feet, in 1 vertex and shoulder, and in 1 breech and arm.

There was 1 case of triplets, in a mother eight months pregnant; the children were all male and still-born.

Of the placenta prævia cases, 8 in number, there were 2 of P. lateralis and 6 of P. centralis. Version was performed in all. Of the children 4 males were born alive, 8 males were still-born, and 1 female still-born. Three mothers died, the usual proportion of maternal deaths being about 1 in 8. One died a few hours after delivery, apparently from shock; the two others had been under the care of ignorant midwives, and were not visited until it was almost easy to say that, although delivery must be accomplished, yet it would be too great a shock to the system for the patient to rally from. Surely such instances as these are a cogent argument for giving to the very poor skilled assistance at their confinements in the shape of educated midwives. There was no difficulty in any of them in procuring dilatation of the os; should such arise where delivery is imperative, I can conceive of nothing better than the use of Barnes's bags for the purpose.

Podalic version was performed 16 times: 8 children were born alive and 8 still-born; 8 were for placenta prævia; 2 for shoulder-presentation, both children being born alive; 1 was arm-presentation, child alive; one arm and funis, child still-born; and 4 were vertex. One of these was a case of cephalhæmatoma, a large, sanguineous tumor which rendered delivery by the natural process apparently impossible. The operation was performed with the left hand in all cases, aided by the right applied externally to the abdomen. In the one arm-presentation the leg first seized was the one opposite to the presenting arm; in the other cases one or other foot, as appeared most convenient, was brought down. On a future occasion I should certainly endeavor to adopt the plan recommended by Dr. Barnes—namely, that of first bringing down the opposite knee, as being the easiest and most accessible, and using the left or right hand according to the position of the child.

Of cephalic version and of bipolar version I am unable to speak.

According to Dr. Churchill, version takes place in about 1 in 220½ cases, and fœtal deaths are rather more than 1 in 2½. In this series version was performed in about 1 in 90 births, and fœtal deaths were as as 1 in 2.

In 3 of the vertex-presentations version was certainly performed as an alternative for craniotomy. Sir J. Simpson proposed this operation, upon the theory that, the bimastoid diameter of the head being less than the biparietal by half to three-quarters of an inch, it is easier to drag the head through the pelvis feet foremost than for the uterus to push it through; since also the uterus contracting upon the head causes the biparietal diameter to bulge out laterally, and so to render the disproportion greater; while if the incompressible bimastoid diameter be pulled through first, traction only causes the compressible biparietal to be elongated, and so renders delivery easier. The whole subject is gone into in Simpson's obstetrical works.

Perforation of the fœtal head was performed three times; in two of these instances the head was delivered by means of the craniotomy forceps, and in 1 cephalotripsy was had recourse to. The experience of these three cases has led me to form the following opinions: first, that the mere fact of diminishing the capacity of the fœtal head does not necessarily render the subsequent delivery at all times an easy matter (in one case the child was extracted with the greatest difficulty, and the mother died of shock); and secondly, that the cephalotribe is a most useful addition to the obstetrician's armamentarium. When the head is high up, at or above the brim, with the cephalotribe applied well over the base of the skull, a few turns of the screw will crush it wholly, and then with an appropriate slight rotation it will draw it down. Dr. Hicks says that, when the head is low down, the cephalotribe is not so good as the craniotomy forceps or crotchet. From my experience of it in this one case, I should certainly have recourse to it again after perforation.

In these 1,487 births the forceps were applied 220 times, or about once in every 6½ deliveries; and, as regards the sex of the children, as follows: 129 to males, and 91 to females. This is remarkable as showing the influence of sex in causing delay, as the same rules applied in all cases, as far as possible, as to the propriety of its use, i. e., when the second stage of labor ceased to be actively progressive. And the cases in which still-born children were delivered after forceps also show the same thing. There were 9 of these, of which 1 was a female and 8 were male infants. Three of these deaths were unmistakably due to delay; they were cases to which I was called after the head had been subjected to prolonged pressure.

There seems to be quite a change in the feelings of obstetricians in regard to the use of the forceps, while formerly, and that within the experience of our older practitioners, the forceps were used on very rare occasions. In the statistics of the Royal Maternity Charity of London for the years 1828 to 1850 inclusive, viz., twenty-three years, it was had recourse to seventy-three times in 48,996 deliveries, or about one in 670 cases; and craniotomy was performed almost as frequently, viz., sixty times. We find that, now so much relief is gained to the patient—so many children saved, especially in first cases—and also (though perhaps some may object that this should be taken into consideration) so much of the time of the accoucheur is saved by a timely and judicious use of the forceps—all are agreed that they may be advantageously used more often than formerly. The cases where its use is indicated may be where, after the os uteri is dilated, there is delay through inertia of the uterus, from whatever cause; obstruction from very slight pelvic contraction or very slight rigidity of the soft parts, as in primiparæ; and there is no great disproportion between the fœtal head and the passages. Of course I am not speaking of those cases in which all would agree in its immediate use, such as convulsions, hæmorrhage, or any complication necessitating immediate delivery. Some practitioners have, I believe, published the result of their practice, showing a more frequent use of the forceps than is given in this series. I am every year more and more convinced of the advantages gained by such practice. Patients on subsequent occasions will frequently ask for its use again; and I have not seen the ill effects which are said to arise in consequence, such as ruptured perinæums, lacerations of soft parts, vesico-vaginal fistula, or puerperal fever. The only case where the perinæum was torn through the sphincter was a primipara, in whom the forceps was not used; and I firmly believe that in the slighter forms of laceration the perinæum is less likely to be torn with the forceps than without, always supposing traction to be made in the direction of the axis of the pelvic outlet; and the same may be said in reference to vesico-vaginal fistula, for experience goes to show that the fistula is caused more often through sloughing from prolonged pressure than from injury from instruments; as Sir J. Simpson remarked that the involuntary flow of urine generally comes on in a few days, more frequently than immediately after delivery.

One symptom, apart from exhaustion, which has influenced me as to the forceps being required, was when the uterus came to be in state of constant contraction, so as to give no interval of ease between the pains, with the head pushed down, and not receding; the patient being in a state of pain all the time, something similar to what is often induced by giving ergot when it fails to effect the purpose for which it was administered. The instruments that were used exclusively have been Ferguson's short straight forceps, and Robertson's long ones, with a double or pelvic curve.

In about three cases only has very great force in traction been used, nearly all the children being born very easily; so much so that I regard it, as others with greater experience have before me, that more is to be done by using judiciously the great power at our command than by applying greater force without judgment.

It is pleasant to have one's own views confirmed on this subject as was done in an able article in the *Lancet* of the 26th of October of last year; the concluding paragraph of which is: "The timely use of the forceps, shortening the second stage of labor, is the great practical improvement in recent midwifery." And at a recent meeting of the Obstetrical Society, in a paper "On the Registration of Still-births," reference was made by Mr. Lowndes to the more frequent application of the forceps as a means of diminishing the number of still-born children.

Retention of the placenta occurred three times: in one of which hæmorrhage occurred, but not to any alarming extent; and in another the flooding was continued until the patient was on the point of sinking, but ceased on abstraction of the placenta, the cause of it all.

Convulsions occurred once only. They came on before full dilatation of the os; and there was no repetition after delivery, which was allowed to go on to conclusion by the natural efforts. I have seen, in consultation in other practices, two other cases, both of which did well, the convulsions continuing after delivery; one was subjected to venesection.

In one instance I was called to a woman who had had several children, and was said to have ruptured a blood-vessel. I found her on the ground quite dead, and surrounded by an immense pool of blood, which was ascertained to have proceeded from a varicose vein of the leg, which had given way. She was in the last month of pregnancy. After making sure of her death I made an abdominal section, and extracted the fœtus. The cord was pulsating; but I failed to establish respiration. The neighbors computed that it was about fifteen minutes from the first commencement of the bleeding until the birth of the child.

Several anomalous cases occurred, such as of incision of the os uteri for rigidity. This was in a pluripara, who always had had tedious labors, and the attendant had applied the forceps and endeavored to extract through a rigid os, a little larger than a crown-piece, which would not give way. No other means had been adopted, such as chloroform, opium, etc. When I saw her I made two small incisions anteriorly and posteriorly through the os on a director. The head was at once brought into the world by forceps, and the patient did well. Three cases of anencephalous fœtuses were born. In one a very large amount of liquor amnii was present, so much so as literally to drown the bed. This is what has been observed in other cases, and is mentioned by Ramsbotham. One very large child was born, a male, fourteen pounds weight, and twenty-six inches in length from vertex to end of great toe; the shoulders were so long in being extracted that it was still-born. These figures correspond to what Dr. Guy gives as maximum for children at full time, the average being six pounds and eleven ounces in weight, and nineteen inches in length. A long funis was seen once, a male child. It was thirty-nine inches, and was twice round the neck. In one case the funis was tied in a close knot about four inches from the umbilicus, but not tight enough to compress the vessels, the child being born alive. Dr. Tyler Smith says: "When the cord is long, and the amount of liquor amnii considerable, it is easy to conceive that the fœtus may, by its own movements, or the changing position of the mother, pass through a loop in the cord, and thus form the knot."

Two of the mothers had an attack of small-pox supervene, one the second day and the other the third day after delivery. Both did well. Another during her lying-in went through an attack of scarlatina, with sore-throat, rash, and subsequent desquamation. She did well.

Apology is needed for the scanty details here given. It is due to the cases having been only registered in the small compass which is allowed in Smith's ordinary Visiting-List, without at the time the slightest thought of putting them together in the shape of statistics.

2.—*Removal of Fibroid Tumors of the Uterus by Enucleation.* By WILLIAM ROSS JORDAN, Surgeon to the Birminhgam and Midland Hospital for Women. [Lancet, March 29, 1873.]

THE cases which follow are two of the most interesting cases of fibroid tumor of the uterus that I have treated in the Hospital for Women, both the tumors being in the wall of the uterus, and having no tendency to point into the cavity. The treatment was similar in some respects to that recently recommended by Dr. Meadows, but seems to have been much more expeditious in its results; while another case, still under treatment, is progressing very slowly.

Mary Jane B., aged twenty-four, single, small and sickly-looking—in fact, presenting a striking picture of exsanguine emaciation, not being able to walk into the room without help. She came to the Hospital for Women on the 12th of September as an out-patient, complaining of very frequent and profuse hæmorrhage. On examination, she was found to have a large fibroid tumor in the anterior wall of the uterus, which could be easily felt through the wasted walls of the abdomen. The uterine cavity measured four inches. The general condition of the patient demanded immediate attention, and I proposed to take her into the hospital; however, she preferred to take physic for a time, and try its effect. The following week she was much the same, and elected to come in; but, as we had then no room, she was not admitted until the 24th. She was allowed a few days' rest in bed previous to the commencement of active treatment.

On September 28th anordinary-sized tangle-tent was introduced into the cervix, which unfortunately was not retained, and was followed by considerable hæmorrhage. A few days' further rest was given to allow any irritation from the first tent to subside; and on the 3d of October another tent was introduced, which remained in position, and caused very little loss of blood. Next day the tangle-tent was removed, and followed by a large sponge-tent. On the 5th the cervix and cavity were sufficiently dilated to admit of a free investigation. The result was that the first diagnosis was confirmed, a large tumor being found in the anterior wall of the uterus, and not presenting any marked projection into the cavity.

October 5th.—An incision was made into the lowest and most prominent part of the tumor with a guarded bistoury, about half an inch deep. The cervix in a line with the incision was divided with a pair of strong scissors. For a few days she went on very comfortably, without hæmorrhage, and with very little pain, the tumor showing no disposition to extrude.

9th.—Going on well; feeling better; an offensive watery discharge has come on.

About this time I went from home for a fortnight. The notes of the case, on the hospital paper (made by Dr. Louisa Atkins, resident medical officer, who also had charge of the patient, and to whose care and attention in this and other cases much of my success has been due), show that a very offensive discharge was present, and considerable pain, at times very severe, and that she suffered from symptoms of pyæmia, the temperature being on one day as high as 39.8° C., and for a week or ten days varying between 37.5° and 38.5°. I returned home on the 24th, and found the note of the morning state, "Hæmorrhage, not profuse; pain; offensive discharge continues." Before the next note was made I saw the patient, who said that the pain had become worse than usual about four in the morning, and that it had increased in severity till eleven, when, with very violent pain, something came into the passage. Judging from her description of the pain, it was very like the pain of labor. A superficial examination showed a large rounded mass, filling the cavity of the vagina. As she complained of great tenderness on examination, and was full of fear, chloroform was administered, and a large fibroid, about six inches long by three, was found perfectly free in the vagina, and removed without difficulty.

25th.—Going on well; appetite good. Has slept well. Temperature in the morning normal; in the evening one-fifth higher. The temperature had been nearly normal in the morning for the last three days, but in the evening had gone up to 38°.

31st.—Doing well; discharge nearly gone. The uterus has resumed its natural size and mobility.

A month later the patient came as an out-patient. She was scarcely recognized, so much improvement having taken place in her general appearance. She is stout, and has a good color.

Mrs. S., aged forty-six, married, has had five children, the last twelve years since. Has been under treatment for some time for a hard swelling in the abdomen; suffers from great and frequent hæmorrhage, and is in a state of great exhaustion. Examination of the abdomen showed a hard, irregularly-rounded tumor, reaching from the pelvis to the umbilicus, four or five inches from side to side. Vaginal examination showed the os and cervix large, the latter swelling out after the manner of a pregnant uterus, movable; sound, six inches and a half by a circuitous route, and in front of a solid mass, could be easily felt below and to the right of umbilicus—in fact, so easily as at first to cause some doubt as to whether it were still in the uterus.

The same plan of treatment was adopted as in the last case, viz., two large and long tangle-tents were introduced. On the next day it was found that one of them had slipped into the cervix, so that the os was only dilated by one, while the cavity was expanded to the size of both. They were removed, and a large sponge-tent put in their place. On the following day the sponge was removed, the smell being very disagreeable. There was now sufficient room to introduce two fingers into the cervix, and to find a large tumor in the posterior and left wall of the uterus.

February 8th.—An incision was made about two inches long on the lowest and most prominent part of the posterior wall, the cervix being divided in the same line by scissors. On passing the finger into the wound and separating the tissues between the mucous wall and the tumor about an inch each way, a soft, roundish mass distended the wound. There was little hæmorrhage. On the next day (the 9th) the mass had filled the opening of the wound, but did not project; on the second day (10th) the tumor projected into the vagina about the size of an egg; the third day (11th), at 11 A. M., the tumor was as large as a small fist, and nearly filled the vagina. Finding that it was still firmly fixed above, and that it was so soft that the vulsellum forceps tore their way out if much traction were made, ergot was given every three or four hours, and at 7 P. M. the tumor was attacked with the intention of removing all if possible, if not, part, as it was getting offensive. After half an hour's tugging and coaxing, a tumor weighing twenty-seven ounces was removed; the uterus was injected with a solution of Condy, and on examination an irregular but flat mass was still felt in the cavity. This not being large, and probably being the irregularly-contracted mucous wall which had covered the anterior aspect of the tumor, was allowed to remain to contract and subside into its natural place, if part of the uterus, or to be expelled if part of the tumor; but, as the upper portion of the tumor, or that part which was last delivered, was most entire and perfect, it was left, with a strong notion that it would stay.

Ergot was given for several days to aid contraction and prevent hæmorrhage. Patient went on favorably, and left the hospital on March 10th, comparatively well, but still weak.

These reports show that there are many cases commonly regarded as hopeless which may be cured, and in which no great harm can be done. The treatment is simple, and, although some surgeons may consider it too heroic, very little harm can follow if care be taken to keep the incision over the bulk of the tumor, and if the fingers are not too vigorously employed to separate the capsule. Should this treatment not finally expel the tumor, it will probably relieve the hæmorrhage for a considerable time.

3.—*Intramural Fibrous Tumor of the Uterus; Hypodermic Injections of Ergot.* [Lancet, May 10, 1873.]

The following case, under the care of Mr. John Clay, was treated at Queen's Hospital, Birmingham, and is reported by Mr. Charles Lakin, resident-assistant:

Jane R., aged twenty-eight, married eight years, admitted into the hospital on July 3, 1872. Has had three children, the last four years ago. The forceps were used for the delivery, and a severe *post-partum* hæmorrhage ensued. The infant being still-born, nursing was not required; nevertheless recovery from the confinement was tedious, and at one time thought somewhat doubtful. The menstrual periods since the last labor have occurred regularly, but always very profusely, the discharge being more or less mixed with coagula. Six weeks ago an unusually long and severe attack of hæmorrhage occurred, from which she rallied with difficulty; and, as soon as she was able, sought admission into the hospital. She was then pale and emaciated, with great anxiety of countenance, and had all the external appearance of a person suffering from advanced malignant disease. There was, however, no pain; but the uterine discharge was profuse, of a dirty-white color, and offensive.

On examination, the uterus was found enlarged, and could be felt distinctly above the pubes. The os was patulous, sufficiently to admit the finger, and a firm, hard substance could be felt in the posterior wall of the uterus. There was marked fulness in the recto-vaginal *cul-de-sac*, which had all the signs of a retroflexion of the uterus. The sound on being introduced scarcely passed two inches, and did not influence the recto-vaginal fulness.

Tents and Barnes's dilators were introduced into the os and cervix uteri to facilitate the diagnosis, but produced little dilatation of these structures. The os uteri was then incised, and some additional space being thus gained for exploration, it was found that the tumor involved the fundus of the uterus, and thus precluded all idea of enucleating it which had been entertained.

Iron was administered, and a generous diet prescribed, and, when her condition was somewhat improved, Mr. Clay determined to give a fair trial of hypodermic injections of ergot. Mr. Stokes Dewson, the resident dispenser, prepared a concentrated solution of ergot, three minims of which was equal to four grains of ergot, and this quantity was injected hypodermically in the hypogastric region daily. The injections caused at first great pain and redness of the skin, but after a few days the injections were well tolerated. At the end of three weeks she had severe pain in the back, headache, and other symptoms evincing that she was fully under the influence of the ergot. The menstrual periods occurred, and the injections were suspended, but there was a marked diminution of the sanguineous discharge. Upward of a hundred injections had been given, and up to December last she had menstruated three times since the treatment was commenced, and on the last occasion the flow assumed the ordinary proportions. The uterus cannot now be felt above the pubes; the fulness in the posterior part of the uterus has sensibly diminished in size, and the os is fairly constricted. The measurement of the uterus is about the same. The leucorrhœal discharge has ceased; her personal appearance has surprisingly improved, and she bears the treatment to which she been subjected with cheerful resignation. The treatment is still continued.

SURGERY.

1.—*Case of Empyema opening through the Lungs.* By Dr. Peacock, St. Thomas's Hospital, London. [Lancet, February 22, 1873.]

The following is a very interesting case of what is generally understood to be a rare result of pleurisy—the evacuation of the fluid through the lungs:

J. W., a married woman, aged thirty-three, admitted December 9, 1872, after having been ill for two months. Her indisposition commenced with shortness of breath, pain in the left side, cough and expectoration; and she had become much prostrated and emaciated. On examining the chest, there were found to be marked dulness and absence of respiration over a considerable portion of the left side, and a loud ægophonic twang was heard with the voice at the upper level of the dull space behind. From these signs it was evident that there was effusion into the left pleural cavity. On December 17th, it was stated, she had had severe attacks of coughing at intervals, and at the end of the paroxysms had expectorated a considerable quantity of matter. The expectoration was in the form of distinct masses of pus, which were free from air, but were enveloped in ordinary bronchitic sputum containing large air-bells. The patient's breath during the fits of coughing had the very offensive odor characteristic of gangrenous lung; and on examining the chest there was found to be an obscure tympanitic resonance on percussion, much resembling the "cracked-pot" sound, about the lower angle of the left scapula. With the cough, and when she drew a full breath after the fits of coughing, a cavernous sound, with some gurgling, was heard in the same situation. From these symptoms and signs it was concluded that the effusion in the pleura was in process of being evacuated through the lungs, and that there was a small escape of air into the pleural cavity. On the 20th the cough and expectoration continued, but the evidences of fluid in the left pleura was less marked, and the peculiar resonance on percussion, and the cavernous sound with the respiration and cough, could not be heard. On the 24th she still continued to expectorate the peculiar purulent masses, and there were slight signs of the entrance of air into the pleural cavity. Her general condition was, however, much improved. The following week there was but little expectoration, and a decided improvement in her general state. The signs of effusion in the pleural cavity were only slightly marked, and respiration was feebly audible over a large portion of the left side. Since that time the improvement has been steady and marked, the cough and expectoration have entirely ceased, and the respiratory sounds have returned over the whole side; and, except having some slight remains of dulness, and a little contraction of the side, the patient, though still retained in the ward, may be said to be quite well.

In reference to this case Dr. Peacock remarked that he believed that cases of empyema opening through the lungs were of more frequent occurrence than was generally supposed. Indeed, this was the third case which had been under his care at St. Thomas's during the last twelvemonth, and he had had a case also at the same time in the Victoria-Park Hospital.

The first impression which he formed of the present case was that the effusion on the left side was probably the result of perforation of the lung in early phthisis, but his subsequent observations did not confirm this view, and he concluded that the empyema was unconnected with pulmonary disease of a prior date. He had repeatedly and carefully examined the chest without finding evidences of disease in either lung. The case was especially remarkable as showing that an empyema might make its way through the lung and be expectorated, although it had probably not been of long duration, and the accumulation was certainly not large. The mode in which the communication occurred and the appearance of the matter expectorated were very characteristic. There were first severe and prolonged fits of coughing, at the end of which the matter was expectorated, the sputum being in the form of large airless masses of distinct pus, enveloped in common bronchitic mucus, containing large air-bells, evidently derived from the bronchial tubes in the passage of the pus through the lung. The breath had the peculiar gangrenous odor, when the patient first began to expectorate, which is so often noticed in similar cases at the beginning of the evacuation, and which doubtless indicates the destruction of some of the lung-tissue when the pus first escapes from the pleura. There was also a slight entrance of air into the pleural cavity, but this, probably from the accumulation of pus in the pleura not being large, and from the opening between that cavity and the bronchi not being free, was never to a great degree, and rapidly disappeared. Indeed, the whole of the pus contained in the pleura seems to have been evacuated, and the lung to have recovered its natural condition, in about three weeks.

The case differed in its symptoms in some degree from cases in which there was a large accumulation of pus in the pleura. In such instances, though the expectoration begins in the same way as in the present case, the appearance of separate masses of pus soon gives place to sudden and large evacuations, which are brought up every few hours or few days in gulps, and the facility of escape into the bronchi is often so great that the expectoration is immediately produced by making the patient lie on the sound side. Indeed, the sense of suffocation and the violent cough caused by the sudden outpouring of the pus into the bronchi are so great that the patient often cannot lie on the sound side for even a very short time. In such instances also the opening between the pleura and lung soon becomes very free, and the air consequently readily enters the cavity, and yields very characteristic signs of the presence of air and liquid in the pleura; often also, when cases get into this condition, the symptoms and signs become very persistent, and complete recovery is with great difficulty effected. The two cases which had previously been in the hospital during the session were examples of such conditions; and in the case of the boy, after keeping him in for some months, the condition of the chest was not materially improved, though his general health was certainly much better. In the case of the female, in which the matter had also been evacuated externally through an abscess, the side got quite well for a time, all evidence of the entrance of air into the pleural cavity entirely disappeared, and the expectoration ceased for some months; but recently the cavity had opened again, and the probabilities of entire recovery were not great. In cases of empyema which have formed communications with the lungs, and are in process of expectoration, the question may arise whether it is desirable to puncture the chest. If there be a large accumulation in the pleural cavity, and if the difficulty of breathing be great and the matter is brought up only in small quantity, and after prolonged and exhausting fits of coughing, Dr. Peacock would not hesitate to have recourse to paracentesis; but, under other circumstances, he would prefer leaving the case to Nature. In one instance which occurred some years ago, the chest was punctured in a case of the kind, and the relief obtained at the time was great; but the patient ultimately died.

2.—*A Case of Atresia Oris.* By Surgeon H. Cayley. [Indian Medical Gazette, August 1, 1872.]

A patient has lately been under treatment in the Alipore Dispensary whose case presents a few points of interest which induce me to offer it for publication:

A Hindoo, aged about thirty-five, was admitted under treatment last month in the following condition: His mouth was firmly closed, so that he could not separate his teeth in the least, the upper front teeth quite overlapping the lower. The lips, too, could only be opened about half an inch, and the corners of the mouth were fixed. The man could only speak in a feeble way, and he was only able to take nourishment by rubbing a little soft rice or milk and such-like substances between his closed teeth; and he was undergoing a process of slow starvation. On examination, it was found that his cheeks were firmly adherent to the gums, both upper and lower, on both sides, from the angle of the mouth to the last molar tooth; and the insides of the cheeks were lined with a rough, dense cicatrix, which was so tight that only a probe could be passed in between the cheek and teeth. This condition was the result of mercurial stomatitis, and, probably, sloughing of the lining membrane of the mouth, which occurred three months ago. It was at once apparent that relief by operation was imperative, but I had some difficulty in deciding what course to pursue. Three points especially required consideration: first, the danger of blood running back into the patient's throat and larynx when he was under chloroform and his mouth was firmly closed, so that one could do nothing to clean the blood away; second, the risk of bleeding taking place inside, when, his mouth being closed, nothing could be done to arrest it. In either case, I was prepared, if necessary, to divide his cheek from the angle of the mouth, and so get at any bleeding vessels. Thirdly, was the likelihood of recontraction and cicatrization during the process of healing.

Having fully administered chloroform, I passed a narrow bistoury between the cheek and teeth on one side, and separated the cheek freely from the side of the jaws, upper and lower. I then divided the firm bands of cicatrix from the angle of the mouth back to the ascending ramus. This allowed the finger to pass in between the cheek and teeth, though the jaws were still closed. I repeated the operation on the other side, and was then able to open his mouth nearly one inch. I next removed three front teeth, which were quite loose, but had been held in their places by the closed jaws. After the one side had been operated on, a little trouble was experienced from the blood running back into the man's throat; but, as soon as the mouth could be opened, this was easily sponged out, and the bleeding was soon checked by a free application of tinct. ferri muriatis. I then put corks between the cheeks and teeth, on each side, to keep the parts distended as much as possible. Soon after the operation the man suffered acute pain, which was quickly relieved by injecting morphia subcutaneously. The next day the corks were removed and replaced, and the mouth well washed out with carbolic-acid lotion; and this was repeated thrice a day for several days.

The patient soon began to take soft food freely, and fully enjoyed his

ability to do so after months of starvation. He still applies the corks to prevent contraction, and can now open his mouth freely to the extent of nearly an inch, and eats and talks with ease.

The danger of reunion of the divided surface, and recontraction, is still to be guarded against; but it is a very exceptional thing for mucous surfaces to unite, and mucous membranes certainly do not contract so readily as skin, and I can in this case depend greatly on the man's perseverance in helping the cure. He most steadily rams in the corks inside his raw cheek, regardless of the sharp pain it gives him; and he is fully alive to the danger of his mouth closing again, and will do any thing to avoid a return to his former state of slow starvation. The surfaces now are very nearly healed, and show little tendency to contract; and I have great hope of his present improved condition being permanent.

3.—*A Remarkable Accident.* By Assistant-Surgeon R. G. Matthew, Midnapoor, India. [Indian Medical Gazette, November 1, 1872.]

Some few months since I was called up about midnight to see a man who was brought in from the mofussil by his friends.

I found him lying on the veranda, quite comatose, body covered with a cold perspiration; the teeth were firmly clinched, and the pulse was barely perceptible.

He was breathing with the greatest difficulty, each respiration being accompanied with a peculiar stertorous sound.

The history of his case was shortly as follows:

He was hand-fishing in a bheel, and, having captured a fish, he placed it in his basket, from which it escaped into the mud, and, having recaptured the fish, he put it between his teeth, intending to bite through its neck and so kill it; while in the act of biting, the fish made its way into his mouth, and, before the unfortunate man could seize it with his fingers, had passed beyond reach, and was at that moment stuck in his throat.

On making an examination, I could plainly see the bifid tail of the fish pointing upward. I was barely able to touch it with my forefinger.

It had been dead some hours, and emitted a most offensive odor.

In the mean time the poor patient rapidly sinking, his attempts to breathe were becoming very feeble, and the pulse at the wrist ceased to beat.

The accident had occurred at about 12 o'clock in the day, and he had been brought in a distance of nearly twenty miles, and how he had survived so long seemed truly wonderful.

Having wrapped a little lint round the blades of a forceps, and having fastened it securely to a piece of whalebone, I passed it downward, and having satisfied myself as accurately as circumstances would permit that the fish was between the blades of the forceps, I pushed down the clamp, and attempted to draw it directly upward.

This I found impracticable for reasons to be detailed farther on. I then began to move it gently from side to side, and after a little time, being, however, obliged to use considerable force, I succeeded in removing the fish entire.

Fortunately for the poor patient, he was quite insensible. Otherwise the agony would have been unsupportable, as the back of the pharynx, soft palate, and uvula, were much lacerated, a considerable portion of the latter being entirely torn away. All this damage was caused by a formidable dorsal fin armed with numerous sharp points passing in a direction upward and backward, and which, being firmly embedded in the tissues of the back of the throat, rendered the removal of the fish a matter of no small difficulty.

It was about two inches and a half in length, and about one inch in breadth. It is very common in the bheels and muddy tanks. Indeed, its appearance is so well known that it is unnecessary to describe it; suffice it to say that it is known as the "koiee mâch," and I believe to zoologists as the "*Anabas scandens*, or climbing tench."

The patient remained in a precarious condition for some little time; he was subsequently removed to the hospital, and in a few days returned to his home convalescent.

Whether this is a rare accident or otherwise, I am not prepared to say. The sub-assistant surgeon informs me that a relation of his was nearly choked under similar circumstances. The accident in that instance occurred to a mere child, and it would appear that the fish was promptly removed with the aid of a blacksmith's pincers.

That this accident may be rare is very probably open to doubt; but that it is awkward for the person concerned, seems pretty certain.

4.—*The Significance of Phosphatic Deposits in Urine.* [Lancet, January 25, 1873.]

The death of the late Emperor Napoleon having attracted much attention to the subject of phosphatic calculus, it may not be altogether uninteresting to dwell upon a few points connected with this affection. Their consideration will not be without some practical advantage, if it stimulates members of the medical profession to undertake further inquiries into the solvent treatment of urinary concretions, and practical surgeons into devising some method for giving it a wider application than it has at present.

To begin with, Dr. Prout's phosphatic diathesis is a misnomer, as Dr. Bence Jones long ago pointed out; for there is no special constitutional condition characterized by the deposition of phosphates. These salts, it is well known, exist in the urine as phosphates of alkalies and alkaline earths, and the former—of potash and soda—from two-thirds or more of the total amount, and are so soluble as not to form deposits; the remainder are composed of phosphates of lime and magnesia, which are precipitated in alkaline or feebly acid urine, the nature of the deposit varying as the alkalinity of that fluid is attributable to the presence of fixed or volatile alkali—ammonia. The amorphous phosphate of lime—deposited when the alkalinity of the urine is due to a fixed alkali, and often occurring, as Dr. William Roberts pointed out, three or four hours after a meal, or where alkalies are administered medicinally—and the crystallized form of phosphate of lime, to which Dr. Hassall called attention in 1860, need not now detain us, for we are chiefly concerned with that found in calculous diseases—mixed, or secondary phosphates, as they are termed. This concretion is composed of the triple phosphate with that of the bone-earth phosphate. It commonly incrusts other species of calculi, some extraneous body, or some inequalities or other growths of the urinary organs. These calculi go on increasing for an indefinite period, and may attain a very large size; they are usually soft, friable, laminated, and studded with crystals of the triple phosphate on the surface; they break down under the lithotrite, and "the general irritation of the system," says Dr. W. Roberts, "and the frequent coexistence of grave anatomical lesions in the urinary passages or the kidneys, render them unfavorable subjects for operation." This author undertook a series of experiments and observations, the results of which he embodied in a paper read before the Medico-Chirurgical Society in 1865, on the solvent treatment of renal, and, under some circumstances, of vesical calculi, and he has opened out, as it appears to us, a line of investigation which deserves to be more perseveringly prosecuted. His experiments were conducted in reference to the solution of uric acid and other forms of calculi, but we are now concerned with the phosphatic. Whatever be the nucleus of a stone, if the urine becomes purulent and ammoniacal we may be sure that phosphatic deposit is taking place, and we may conjecture its depth by the intensity of the alkaline reaction, the quantity of pus discharged, and the length of time during which these symptoms have persisted. Once the alkaline reaction of the urine is established in a case of stone, it rarely afterward gives place to an acid reaction. We would carefully guard against being considered as implying that any solvent treatment would have been applicable in the case of the late emperor. All we desire to inculcate is, that this method of treatment merits more attention than it has received. The late Sir Benjamin Brodie successfully employed a weak solution of nitric acid in the treatment of phosphatic calculus; and Dr. W. Roberts states that his colleague, Mr. Southam, has also tried the same method, and with the best results, in a case where fresh phosphatic concretions formed in the bladder as fast as the old ones were broken by the lithotrite.

5.—*Extraordinary Case of Double Intussusception.* [Lancet, May 17, 1873.]

By the courtesy of Mr. Peregrine, the house-surgeon to the Victoria Children's Hospital, we (editor *Lancet*) witnessed the autopsy of an out-patient who had been under the care of Dr. Julian Evan. We learned that on the 7th of April the infant, aged six months, was first brought to the hospital on account of diarrhœa, which ceased four days later. On the 14th the mother mentioned having felt a lump in the middle of the lower part of her babe's belly; but examination of the abdomen detected only general fulness, tympanitis, and rigidity of the muscles, without marked tenderness on pressure. For ten days from this date the child continued under treatment for slight diarrhœa. On the 24th and 28th of April the child was seen and treated for "increasedly frequent diarrhœa;" but on the evening of the last date became much collapsed, after straining at stool, when he voided, with a natural motion, an easily-recognized portion of gangrenous gut. Some twenty hours later he passed fæces, which contained some shreddy matter, and rapidly sank from exhaustion. The child was unweaned, sucked well, and did not vomit up to the time of his death.

At the examination, twenty-one hours after death, no distinct tumor could be detected before the abdomen was opened. The small intestines were empty, and only an occasional trace of lymph existed on the peritonæum. A solid-feeling mass occupied the back part of the left iliac region, and extended from an evident intussusception some nine inches above, to within four inches of the anus. This mass proved to be doubly intussuscepted large intestine, for, though it was mainly an inversion of a portion of the intestine into the tube of the gut immediately below, yet at one spot this relation of the upper and lower portion of bowel had been reversed. The portion of gut invaginated downward was of a deep-red color, with its contiguous peritoneal surfaces firmly adherent, closely packed into the surrounding bowel, and extending about five inches below the obtuse folded edge of gut, which formed the upper and external limit of this intussusception. On the outer or peritoneal surface of the bowel, two inches below the upper limit of the intussusception just described, there was an obtuse doubled edge of gut, forming the inferior and external limit of a portion, about an inch long, which was here invaginated upward. The contiguous peritoneal surfaces of this second intussuscepted piece of intestine were non-adherent. A perpendicular section into the centre of these invaginations displayed five layers of intestinal wall lying parallel with each other at the situation of the second intussusception, while above and below this there were three layers so placed. Where the constriction was greatest, owing to the second intussusception, one side of the inner invaginated portion of gut was absent, evidently from gangrene.

It is clear that in this case the lesser or upward invagination was altogether secondary to the other, and probably occurred at the time of the last motion, or the last but one. This is possibly explained by the traction exerted, in the main intussusception, through the invaginated mass having drawn down the upper part of the outermost layer of intestine over and outside the portion of gut immediately below. The diarrhœa that was stated to exist was probably only a flux from the mucous coat of the invaginated and inflamed intestine.

The case is instructive as showing with what slight symptoms such a condition may exist in an unweaned infant, and how impossible it would be to reduce such a state of parts after the lapse of any interval from the time of prolapse. We hope the preparation from this case will be exhibited, for it is important as proving the possibility of an intussusception occurring upward into the bowel above, and it is interesting from its completeness in showing the voided gangrenous portion.

THEORY AND PRACTICE.

1.—*On the Administration of Phosphorus in Neuralgia.* By Edwin Slade-King, M. D., M. R. C. P., London, Medical Officer of Health for Ilfracombe. [Medical Times and Gazette.]

Phosphorus is frequently referred to as a drug which may be given under certain circumstances, seldom as having been given. It is not convenient to dispense; its peculiar odor is disagreeable to most persons, and betrays its presence in prescriptions. In this country it is rarely employed. When administered internally, it is most likely decomposed into phosphoric acid, phosphuretted hydrogen, and phosphorous acid. In large doses it is an irritant poison, producing violent thirst, vomiting, inflammation, and mechanical disorganization of the mucous tissue. In medicinal doses it increases the frequency of the pulse, raises the temperature of the surface, and increases the flow of urine (in which its presence is soon detected), and generally produces perspiration, if continued. In single doses its effects soon pass, and are not followed by any marked reaction.

I have carefully selected some cases of neuralgia in which to try its effects, excluding those in which there was any defined source of irritation, any intermixture of rheumatism, or a marked periodicity of recurrence, taking cases of pure neuralgic pains for which no adequate cause could be discovered, and more particularly tic-douloureux and hemicrania. The dose of phosphorus should not exceed one-twentieth nor be less than one-thirtieth of a grain, to be repeated till an entire grain is taken in all. If the pain is not then greatly relieved or cured, it is of no use to push the administration of the drug further. The absorption of phosphorus into the blood is rapid, and its effects transitory in the extreme. Its best mode of administration in neuralgia, therefore, is in minute but frequent doses, commencing with the one-twentieth or one-twenty-fifth of a grain every two hours. The patient must partake of a little mucilaginous or farinaceous nourishment some ten minutes previous to each dose. When eight doses have been taken in this manner, increase the interval between each dose to four hours, and finally to eight hours. Used in this way, I have found it most successful in its results, and have never noticed any unpleasant effects. Its action for good has been more rapid than any drug which was not narcotic or anodyne, and its results lasting in most cases. I would venture to suggest its employment in cases of snake-bite, and feel sure that, if tried for that purpose, or as has been suggested in German practice, to "promote the reappearance of the eruption in some of the exanthemata, when this, from some cause, has receded from the skin," or when it is requisite to combat intense nervous prostration, it will be found that its success will depend on its being prescribed in small, frequent, equidistant doses, guarding the stomach by the administration of bland nourishment in the manner above mentioned. The administration of phosphorus in the solid form is neither convenient in dispensing nor safe to the patient; its solution in ether is open to the objection of the smell, which cannot be avoided, and to its easy precipitation, which defect may, however, be easily met by adding it to equal parts of mucilage and syrup. It is in this form that I am compelled to prescribe it, not having been fortunate enough to procure the solution in superheated oil of sweet almonds, recommended by Méhu, which, when enclosed in capsules, would be probably the most convenient formula.

Miscellany.

Appointments, Honors, etc.—Dr. Daniel H. Kitchen has been promoted to be Second Assistant Physician of the New York State Asylum at Utica, *vice* Dr. Walter Kempster, appointed Superintendent of the Northern Wisconsin Hospital for the Insane. Dr. William S. Whitwell, late of Charity Hospital, has been appointed Third Assistant Physician to fill the vacancy. Dr. W. S. Chipley, formerly Superintendent of the Eastern Lunatic Asylum of Kentucky, has been reappointed to that position, in place of Dr. John Whitney, whose time of service has expired. Miss Dr. Frances A. Rutherford is Fourth Vice-President of the Michigan State Medical Society. She attended the recent session of the State Medical Society at Saginaw City. Dr. Walter Hay, of Chicago, has been appointed Adjunct Professor of Principles and Practice of Medicine in the Western Medical Institution. Prof. D. Warren Brickell, formerly of the University of Louisiana, has been appointed one of the Professors of Obstetrics and Diseases of Women and Children, and Clinical Midwifery, in the Bellevue Hospital Medical College in this city. Dr. M. H. Henry has been appointed, by the Commissioners of Emigration, Surgeon-in-Chief of the State Emigrants' Hospital, Ward's Island, New

York. Dr. Joseph Draper, formerly an Assistant Physician in the Vermont Asylum, and more recently in the New Jersey State Asylum, has been appointed Superintendent to fill the vacancy occasioned by the resignation of Dr. William H. Rockwell. Dr. James H. Denny, for many years Assistant Physician at the Insane Retreat, Hartford, Conn., has been made Superintendent of that institution. Dr. Edward Curtis has resigned the office of Microscopist to the Manhattan Eye and Ear Hospital in this city, and Dr. Henry C. Eno has been elected to fill his place, with the title of Pathologist. Tennessee is to have two new institutions for insane; one in the eastern and the other in the western division of the State. Dr. Edward Warren, late Professor of Surgery in the College of Physicians and Surgeons, Baltimore, has accepted the position of "Surgeon to the Staff of the Khédive of Egypt," with the rank of colonel, and the privilege of engaging in private practice in that country. Dr. H. C. Wood, Jr., of Philadelphia, is no longer connected with the *Quarterly Journal of New Remedies*. The Trustees of Jefferson Medical College, having requested Prof. Joseph Pancoast to withdraw his resignation of the chair of Anatomy in that institution, he has complied with the request, and will discharge the duties of the chair during the ensuing session. Surgeon James C. Palmer, of the Navy, will be placed on the retired list of officers on account of being sixty-two years of age, as prescribed by law, and faithful service for over forty years. Medical-Director Joseph Beale, of Pennsylvania, will be Chief of the Medical Bureau of the Navy by the retirement of Dr. Palmer. The professorship of Eye and Ear Diseases in the University of Maryland, and the lectureship on Operative Surgery, formerly united, have been divided. Prof. Julian J. Chisolm retains the chair of Eye and Ear Diseases, and Prof. Allen P. Smith has been called to that of Operative Surgery. Mr. Erichson, of London, has been obliged, on account of illness, to withdraw entirely, for the present, from active professional duties. We regret to hear that Dr. Nélaton, the celebrated surgeon, is dangerously ill in Paris. The Indian Medical Service has sustained a severe loss by the death of Dr. Colles, who was a Fellow of the Royal College of Surgeons of Ireland, and Doctor of Medicine of St. Andrew's University. He died on February 7th, at Dinapore. He had been acting in the room of Dr. S. B. Partridge, as Professor of Descriptive Anatomy in the Calcutta Medical College. Dr. Bazin, the well-known Professor of Dermatology at the Hospital of St.-Louis, Paris, was recently made an Officer of the Legion of Honor on retiring from his hospital office. Dr. Druitt has been made the recipient of a very handsome testimonial in the shape of a silver cup, and a balance of £1,284. Dr. Carl Rudolph Braun, Professor of Obstetrics and Gynæcology at the University of Vienna, has been raised to Knighthood, with the title of "Fernwald." Dr. Hilgendorf, Senior Professor of the Polytechnic Institute in Dresden, has accepted the chair of Natural Science in the School of Medicine at Jeddo, Japan. Dr. Cochins, late of the Victoria College in Berlin, has been elected Professor of Physics and Chemistry in the same college. Alexander Nisbet, M. D., Honorary Physician to Queen Victoria, and Inspector-General of Hospitals and Fleets, and Joseph Ritchie Lyon Dickson, Physician to the British Legation in Venice, have received the honor of Knighthood. Mr. Curling has been elected President of the Royal College of Surgeons. Mr. Le Gros Clark and Sir James Paget are the Vice-Presidents. Prof. Humphrey and Mr. Holmes are Hunterian professors. The vacancy produced at the St. Thomas's Hospital by the retirement of Mr. Le Gros Clark, who has been on the tutorial staff of this medical school for forty-three years, will be filled by the elevation to the post of Surgeon of Mr. MacCormac, the Senior Assistant Surgeon; and Mr. Wagstaffe, who has held the post of Resident Assistant-Surgeon for three years, will supply the vacancy caused by Mr. MacCormac's promotion. Dr. Curnow, a distinguished student of King's College and graduate of the University of London, has been elected to fill the chair of Anatomy at King's College, vacant by the death of Prof. Partridge. Dr. W. B. Carpenter, F. R. S., has been elected a Foreign Corresponding Member of the French Academy of Sciences.

Anal and Perineal Neuralgia.—Dr. S. Weir Mitchell contributes the following observations on this disease to the Philadelphia *Medical Times* of July 19, 1873:

"I have met with a set of cases during the last few years which, so far as I know, are undescribed in the books, and which are sometimes very unmanageable. The disorder in question is a painful affection of the anal and perineal regions, accompanied or not, as the case may be, with spasmodic contractions of the anal muscles and of those of the perinæum. This form of neuralgic trouble is met with now and then in locomotor ataxia, but so far I have encountered it only in men, and even in them it is rather rare, since in the numerous examples of this disease which I have seen at my clinic, or in private practice, it has occurred but in two cases.

"One of these was a man aged thirty-eight years, who had been ataxic for nearly twelve years, during all of which time he had had frequent attacks of terrible neuralgia in the legs and arms. About once a month he is seized with agonizing pain in the anus and perinæum. The pain has no relation to the state of the bowels, and invariably comes on soon after he goes to bed, and usually when he is nearly asleep. After a half-hour of singular torment, the anal muscles begin to quiver, or, as he says, 'to work,' and soon after the attack passes off. More rarely it continues longer or recurs during the night. An application of ice gives relief after a time.

"In the other example there is no spasm, but the pain is always nocturnal, and is apt to awaken him from sleep.

"In all the remaining cases which I have seen, the attacks followed masturbation or sexual intercourse, and in one instance was apt to take place after nocturnal emissions.

"A lad, aged eighteen years, who consulted me last year, told me that he began to suffer two years before, while practising self-abuse very freely. It followed masturbation immediately, but not after every instance, and was most common when the indulgence in this vice had been excessive. A few months before I saw him he had ceased to masturbate, but the pain still came on about once a week, and usually soon after he went to bed. Firm pressure on the anal region gave some relief; but he was not finally cured until after a long course of tonics and of sea-bathing. I have met with other cases of the same sequence, and in old men I have also seen a few examples in which there had been no sexual excitation to account for the pain.

"It is much more rare after sexual intercourse; but in two of the most severe examples this relation existed. One of them was a young man, married some three months, who told me that after having sexually exhausted himself he had his first attack, which was very violent. The pain began in the anus and extended to the perinæum, and there was but very slight spasm. After this it followed, occasionally, sexual intercourse, but was never again so severe. I enjoined greater temperance in the marital rites, and he suffered less and less until after an ague, which the following spring affected his general health. Then there were frequent and severe paroxysms, sometimes without any previous indulgence. As his health improved, the local trouble got better, and has now ceased to annoy him.

"I have seen but one case as severe, and this in an unmarried and continent bachelor aged thirty-five years. The pain returned almost every night for two weeks, and was finally cured by suppositories of belladonna and opium. The spasms were lasting and very painful, and came on with the earliest of the deep-seated, dull pains in the rectum. I have not met with any, save the ataxic cases, which resisted treatment for a length of time.

"I have described in the *American Journal of the Medical Sciences* for July, 1873, a curious series of ataxic cases with neuralgia, in which permanent ease was obtained by absolute rest. In one of these there was slight but frequent anal neuralgia, which ceased with the relief of the pains in the limbs."

New York Free Dispensary for Sick Children.—The Second Annual Report, for the year ending March 31, 1873, shows that 4,661 children, chiefly infants, received medical and surgical relief during the two years it has been established; 2,672 were treated in the past year. The beginning of the second year found but $815.61 of funds in bank; its close exhibits $5,397.15, with which to enter upon the third year. Attending Physicians, Drs. P. B. Porter, John C. Jay, Jr., H. T. Hanks, David Magie, B. F. Dawson, F. H. Rankin. Consulting Physicians and Surgeons, T. G. Thomas, Thomas Addis Emmet, Fordyce Barker, J. B. Reynolds, Willard

Parker, J. Marion Sims, T. M. Markoe, J. S. Theband, J. Kammerer, J. J. Hull.

Medical Department of the California State University.—At a late meeting of the Board of Regents of this institution, Mr. Haight, from the Advisory Committee, introduced the following resolution, which was adopted:

> *Resolved*, That the following gentlemen be invited to professorships in the Medical Department: Dr. T. M. Logan, of Sacramento, President of the American Medical Association and Secretary of the California State Board of Health, to be Professor of Hygiene; Dr. G. A. Shurtleff, of Stockton, Superintendent of the State Hospital for the Insane, to be Professor of Mental Diseases and Medical Jurisprudence; Dr. A. B. Stout, of San Francisco, to be Professor of Surgery; and Dr. Hatch, of Sacramento, to be Professor of Materia Medica.

The Peninsular Journal of Medicine.—The first number of the new issue of this journal, published in Detroit, Michigan, promises well, and presents a very attractive appearance. The name of Henry F. Lyster, M. D., appears as editor, followed by the names of eight associate editors. With proper encouragement on the part of the profession in the West, we have no doubt the *Peninsular Journal of Medicine* will prove a success. The *Michigan University Medical Journal* ended its career with the number for April, 1873.

The American Otological Society.—The Sixth Annual Meeting of this Society was held in Newport, R. I., July 16th. The following are the officers for the ensuing year: President, D. B. St. John Roosa, M. D.; Vice-President, Clarence ~~Y.~~ J Blake, M. D.; Secretary, J. Orne Green, M. D.; Publishing Committee, J. Orne Green, M. D., Charles E. Hackley, M. D., R. F. Weir, M. D.; Committee on Progress of Otology, Chas. H. Burnett, M. D., and Clarence ~~Y.~~ J. Blake, M. D.

College of Physicians of Philadelphia.—The following officers were elected: President, Dr. George B. Wood; Vice-President, Dr. George W. Norris; Secretary, Dr. John H. Packard; Treasurer, Dr. J. Rodman Paul; Recorder, Dr. J. Ewing Mears; Librarian, Dr. Robert Bridges; Censors, Drs.

Isaac Hays, Joseph Carson, Lewis Rodman, Edward Hartshorne; Councillors (for three years), Drs. W. S. W. Ruschenberger and James H. Hutchinson.

The Medical School of Maine.—The Overseers and Trustees of Bowdoin College have made the following elections for the Medical Department: Dr. E. W. Jenks, Professor of Diseases of Women; Dr. Alfred Mitchell, Professor of Obstetrics and Diseases of Children; Dr. Robert Amory, Professor of Physiology; Dr. T. H. Gerrish, Professor of Materia Medica. Dr. Dwight was reëlected Professor of Anatomy, in order to correct certain clerical irregularities.

Medical Society of Wisconsin.—At the late meeting of the Medical Society of Wisconsin, the following officers were elected for the ensuing year: President, M. Waterhouse, of Portage City; First Vice-President, T. P. Russell, of Oshkosh; Second Vice-President, S. A. Ferrin, of Montfort; Secretary and Treasurer, T. J. Reeve, of Appleton; Assistant Secretary, Theron Nichols, of Milwaukee.

State Medical Society of Virginia.—The officers elected for the ensuing year were: President, Dr. Harvey Black; Vice-Presidents, Drs. A. S. Payne, H. Latham, R. K. Burgess, J. H. Claiborne, S. Kennerly, and O. Fairfax. The next meeting is to be held on the second Tuesday in November, 1873, at Norfolk.

Harlem Medical Association.—The following are the officers of this flourishing society for the present year: President, Dr. John Shrady; Vice-President, Dr. Malcolm McLean; Secretary, Dr. Henry G. Forbes; Treasurer, Dr. Henry T. Pierce; Trustees, Drs. H. H. Gregory, H. L. Sheldon, and Henry F. Patch.

Death from Methylene Ether.—Dr. Lawson Tait reports a case of death during the administration of this anæsthetic. The patient had taken five drachms of the methylene ether, and was perfectly unconscious, when the pulse suddenly ceased. The *post-mortem* examination revealed nothing to account for death.

Harvard University.—Charles B. Porter, now Demonstrator, has been appointed Assistant Instructor in Surgery; Clarence J. Blake, M. D., and J. Orne Green, M. D., Lecturers on Aural Surgery; F. B. Greenough, M. D., and E. Wigglesworth, M. D., Lecturers on Syphilis; James R. Chadwick, M. D., Lecturer on the Diseases of Women; Charles P. Putnam, M. D., Lecturer on the Diseases of Children; James J. Putnam, M. D., Lecturer on the Application of Electricity to Nervous Diseases.

The Yonkers Medical Association.—The following are the officers of this Association for 1873: President, Dr. H. M. Sprague, of Fordham; Vice-President, Dr. George F. Jackson, of Carmansville; Secretary, Dr. T. R. Pooley, of New York; Treasurer, Dr. S. G. Perry, of Yonkers; Trustees, Drs. Reinfelder, Jenkins, and Varian. The Society has twenty active and six honorary members.

The Development of Epithelioma.—Dr. Vajda, Assistant-Surgeon of the Vienna General Hospital, publishes, in the *Centralblatt für die Medizinische Wissenschaften* for June 7th, an account of the results at which he has arrived from his investigation of the mode of growth of epithelial cancer. The object of the inquiry was to ascertain, if possible, the reason of the difference in the views entertained by pathologists on the subject.

From an examination of specimens of epithelial cancer, of which the Vienna Hospital afforded him an abundant supply, Dr. Vajda has arrived at the following results:

1. The primary basis of epithelial cancer is always a normally present vascular system, often of extremely fine calibre. This stands in such intimate relation with the epithelial new growths, that the newly-formed epithelial elements may be regarded as the products of the nuclei and cells lying in the walls of the vessels.

2. The vessels lying beyond the limits of the physiological epithelium also take part in the formation of epithelial cancer; an endogenous formation of nuclei taking place either in the nuclei of the vascular walls, or, more rarely, in the epithelial cells lying in direct connection with the vessels. Around the newly-formed nucleus is collected plasma, by which the cell may be regarded as being formed.

3. The new epithelial cells, thus produced, generally re-

main for some time in continuity, or sometimes only in contiguity, with the vessels.

4. If the conditions for further development are not presented to the newly-formed cells, which is especially the case when large masses remain collected for some time, retrograde metamorphoses generally set in. These embrace mucous degeneration (as in cancer of the mucous membranes); fatty degeneration (as in cancer of the lips and labia pudendi); horny change of the newly-formed elements (as in cancer on the limbs). After fatty degeneration, a vascular net-work without junctions, the existence of which was readily suspected, often comes into view; or when larger vessels are laid bare by the falling away of the proliferated elements, or by the preparation of the specimen, a vascular skeleton may be seen, formed of tubes whose walls consist of a mesh-work without nuclei and without life. According to Cohnheim, the same is observed in the cornea.

5. In parts which are undergoing cancerous degeneration, very numerous pale cell-elements, manifesting lively motions, are found; and these, especially when examined with the warm stage, are seen to throw out and retract processes, without, however, appearing to undergo any remarkable change of position.

6. Epithelial degeneration extends with special facility in parts where the vessel which has formed the starting-point lies in loose tissue, or when the surrounding connective tissue has been broken up by inflammation.—*British Medical Journal.*

A Case of Melanæmia.—An interesting case of this rare affection is given in the second Heft of Stricker's *Jahrbuch*, for this year by Dr. S. von Basch. The patient was a physician of the Banat, and lived in a malarious district. In 1868 he had an attack of ague, which was cut short by quinine. A second attack was dealt with in the same fashion in 1869; but the attacks were renewed more violently in 1870 and 1871, till in 1872 they appeared in a most aggravated fashion. In May that year he was also attacked by neuralgic pains apparently malarious in their origin. In June he began to complain of pain in the urethra while passing water, and this pain gradully spread upward till it reached the symphysis pubis. Fourteen days later, he had pain in his joints, and high fever, which yielded to water-dressings, and quinine in large doses. These pains began in the course of the morning, and gradually increased in intensity till about four or five o'clock in the afternoon. During the early hours the urine was normal, or with only a slightly flocculent precipitate of mucus; but that passed near the time when the pain was greatest was turbid and milky-looking, depositing a copious dirty-white sediment soluble on the addition of acetic acid. When seen in August by Dr. Basch the patient was markedly cachectic, and the spleen and liver were enlarged. Under appropriate treatment he somewhat improved, but the sediment continued. One day, examining the urine when free from the white sediment, Basch found a scanty reddish precipitate, mainly composed of uric-acid crystals, with some oxalates, but containing over and above hyaline masses, some of them like cells, some in fragments, the larger of which were thickly filled with dark-brown and finely-granular pigment. Further investigation showed that exactly the same kind of bodies were to be found in the blood. The ordinary dirty-white sediment was found to consist of needle-shaped crystals, sometimes solitary, sometimes in rosettes, and were set down as the crystalline bibasic phosphate of lime. The urine itself was acid. The case was so far satisfactory that the patient improved and obtained a considerable degree of health.

Filth without Fever.—Dr. Dudgeon, who has had abundant opportunities for observing the sanitary condition of Peking, China, in connection with the history of cholera among the Chinese, reports as follows concerning that city:

Dr. Dudgeon refers to the filthy condition of that city—a condition of which, he says, people in the West can form no notion, for the smells defy description—in regard to the wonderful immunity of the inhabitants from fevers. If bad smells alone created fevers, there ought to be no immunity from these diseases. The police and scavengers are among the healthiest and most robust of the population, and the beggars who congregate in the very centres of pollution, contesting with tho dogs priority of claim to the refuse of the dunghills, survive and flourish, and most of them—at least the strictly professional ones—look fat and sleek. The sanitary legislation of Western cities, he says, is based upon the one idea that disagreeable and offensive odors are necessarily deleterious to health. The condition and mortality of Peking, I think, would seem rather to explode this belief. The removal of night-soil may be considered most destructive to health; yet here, there being no system for carrying off sewage or scouring drains, the entire night-soil of the city is transported during the day, through the most crowded and sometimes narrow thoroughfares. We are obliged to pass certain localities at all times with closed nostrils, while hundreds of people continually live in and around and above these open cesspools, and yet manage to look well and healthy. Many diseases prevail here as in the West, without the agency of this reputed cause, noxious odors; and the causes exist at all times here without producing such diseases.—*Lancet.*

Deaths from Chloroform.—The records of such accidents, the *British Medical Journal* remarks, are much less carefully kept in France, where vital statistics of hospital and private practice are not accurately registered or universally published, than in England. A case was, however, communicated by M. Lefort to the Surgical Society of Paris on the 30th April. The patient was an apparently healthy man, thirty years of age, suffering from fissure of the anus. Anæsthesia was procured satisfactorily, and forcible dilatation was practised. After the close of the operation the patient was still sleeping, without any disquieting symptoms, but presently became stertorous, cyanosed, and pulseless. The tongue was drawn forward; Sylvester's method of artificial respiration and tracheal insufflation was employed, as well as the electric current, but without any effect. The necropsy disclosed no cause of death. The death of a well-known lady at Lille, from chloroform administered for the purpose of extracting a tooth, has been the cause of some sensation.

In the *Lancet* of May 24th we find still another death reported: Thomas Breton, aged sixty, the insane criminal who died under chloroform on the 15th inst. at Broadmoor, is another of the numerous instances in which death may follow the use of the anæsthetic, in spite of every precaution. On the 14th inst. he had fallen and injured his perinæum, as a result of which blood issued from the urethra, while no urine was passed all the next night. The patient's resistance to the introduction of the catheter necessitated the administration of chloroform, which was accordingly done in a large well-ventilated room with Clover's apparatus, the bag containing at the time 11,000 cubic inches of air, of the proportion of 25 minims of chloroform to each 1,000 cubic inches. At first nothing abnormal occurred; the patient became insensible; but on the introduction of the catheter he struggled so that the inhaler was again applied. Seven minutes thereafter the pulse flickered and stopped. Restorative efforts were immediately practised, but in vain. At the autopsy the right side of the heart was flaccid and full of fluid blood, the left side empty and contracted, while the arteries in the brain and throughout the body were atheromatous. Blood was found infiltrated into the cellular tissue of the perinæum and scrotum.

Treatment of Obstinate Constipation.—Dr. Macario, of Nice, in a communication to the *Lyon Médicale*, observes that in treating constipation most practitioners confine themselves to enemata, laxatives, or more or less irritating purgatives, which in point of fact rather aggravate than cure the affection. He therefore wishes to make known what he says may be truly termed an "heroic" remedy, which he has employed during twelve years with such constant success that he cannot but regard it as infallible.

Constipation, as every one knows, may be produced either by intestinal excitement with deficiency of secretion (nervous constipation), or in consequence of deficient contraction of the muscular coat of the intestine. Here it is produced by atony or intestinal indolence, which bad anti-hygienic habits have induced and keep up. The prolonged contact of the fæces with the rectum blunts the sensibility of the mucous and muscular tissues, and the synergical contraction of the upper portions of the large intestine either does not take place or does so in an insufficient degree, constipation being the result. In *nervous* constipation the following pill should be given: Pure sulphate of iron ten centigrammes, socotrine aloes five centigrammes, atropine from one-third to one-half of a milligramme. In the *atonic* form, for atropine one centigramme of powder of nux-vomica may be substituted. By the aid of these pills regular stools may be procured, even in the subjects of obstinate constipation due to *ramollissement* of the brain and chronic myelitis with paraplegia. Dr. Macario gives from one to three pills immediately after dinner, the object being to produce one easy, natural, non-diarrhœic evacuation. If more than this is effected, the dose is to be diminished, one or two pills sufficing in most cases. The use of these "antistyptic" pills ought not to be continued indefinitely, a longer interval being allowed to elapse between their administration in proportion as the constipation diminishes, it being of importance to allow the organs to resume their spontaneous action without any auxiliary. If the constipation returns, the pills can be again had recourse to.

A New Medical College.—We are to have another medical college in Philadelphia—the Medical Department of Lincoln University. This institution, located at Oxford, Chester County, in this State, was established some years ago, and is rapidly growing in importance. It is intended especially to meet the educational wants of the negro, Mongolian, and Indian races.

The Medical Department is now fully organized, and its early removal to Philadelphia is contemplated, where the students will have the advantages of clinical instruction in one or two of our prominent hospitals. An effort is now being made to raise funds for establishing a dispensary and hospital in connection with the department, and the indications are that the effort will be attended with success. There is no hospital in Philadelphia for the exclusive use of colored people, and the prominent and wealthy citizens among them will, no doubt, make generous contributions to and use their influence in behalf of this object.

The students in the Medical Department of Lincoln University have all taken a collegiate degree, and in point of intelligence will compare most favorably with those of our best medical colleges. The medical faculty consists of the following gentlemen, all of them residing in Philadelphia, and all known as respectable, and some of them prominent, members of the profession:

S. B. Howell, Professor of Chemistry; E. C. Hine, Professor of Surgery; Theo. H. Seyfert, Professor of Physiology; Harrison Allen, Professor of Anatomy; Henry Hartshorne, Professor of the Theory and Practice of Medicine; Wm. F. Jenks, Professor of Obstetrics; F. H. Hassler, Professor of Materia Medica. Leonardo S. Clark has been appointed Demonstrator of Anatomy.—*Medical and Surgical Reporter.*

Lady Medical Students in Edinburgh.—On July 4th, in the Court of Session, Edinburgh, the judges in the second division delivered their opinions in the case of Miss Jex Blake and other lady medical students, against the *senatus academicus* of the University of Edinburgh. The opinions of the other judges had been given previously; and the result is, that the court has decided, by seven to five, in favor of the defenders—the majority of the court being of opinion that, according to the constitution of the University, the education to be provided was for males only, and that ladies were not entitled to attend the classes and to graduate.—*British Medical Journal.*

Pregnancy in the Aged.—Dr. Meynert has communicated to us the following case which has fallen under his own observation: A lady died at the age of eighty-five, having had four accouchements. The first took place at the age of forty, the second at forty-eight, the third at fifty-one, and the fourth at fifty-six. Five girls were born, of whom three are still living, the two twins being seventy-seven years old, and the youngest child seventy-one. These three persons, the two eldest of whom have been married and have several children, still enjoy the most excellent health.—*Lyon Médicale.*

Obituary.

Geh. Sanitsrath Dr. Berend died on June 25th at Berlin, in which city he had practised with great success as a surgeon during forty years. Formerly an assistant of Dieffenbach, and then surgeon to the Jews' Hospital, he became famous in operative surgery. He is best known abroad, however, for his famous Orthopædic Institution, which he founded thirty-three years ago, and continued to direct with great success, patients resorting to it from all parts, his great aim being not to separate orthopædics from the general practice of surgery. He founded, also, the Berlin "Gesellschaft für Heilkunde."

Dr. Moritz Heinrich Romberg, whose death we mentioned in our last issue, was born in Meiningen, and graduated at the University of Berlin in 1817, after which he studied in Vienna under John Peter Frank. In 1820 he was appointed a medical officer of the poor in Berlin, a situation which he held for twenty-five years. In 1830, on the outbreak of cholera in Berlin, he was appointed director of the cholera hospital; and he held a similar post when the epidemic again appeared six years later. In 1838 he became an extraordinary professor, and in 1845 ordinary professor, in the University of Berlin. His principal work, a treatise on the "Nervous Diseases of Man," was first published in three parts, in 1840, 1843, and 1846, and was in 1853 translated into English, by Dr. Sieveking, for the late Sydenham Society. He also edited, in German, Sir Charles Bell's "Physiological and Pathological Researches on the Nervous System," and was the author of treatises on cholera and on respiratory paralysis, and of various contributions to the periodicals. For some years before his death he had symptoms of heart-disease.

We announce with regret the death of Dr. Henry S. Hewit, of this city, which took place on the 19th ult.

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Original Communications.

ART. I.—*Remarks on Varicocele and Varices of the Lower Extremities.* By NATHAN BOZEMAN, M. D., New York.

IN the issue of the NEW YORK MEDICAL JOURNAL for July, is an article entitled "Varicocele and its Radical Cure," by Octavius A. White, A. M., M. D., of New York.

No one who has carefully read this interesting article can fail to see that much labor has been bestowed upon it by the author, and, in the operation proposed and described, we think, he can justly lay claim to considerable originality, as compared with the various procedures referred to. But, as his elaborate review of the subject of treatment relates principally to what has been accomplished in Europe, we may be pardoned for saying here that American surgery, after all, is not so deficient in resources as would seem from this discussion of the subject.

It is not to be understood, however, from the little fault found with Dr. White's otherwise valuable contribution to science, that we intend to write a complete history of the treatment of varicocele in this country; nor do we even propose to discuss the most approved methods in use at the present moment by home surgeons.

Some fourteen years ago, when we were engaged in the general practice of surgery, our attention was directed particularly to the treatment, not only of varicocele, but varices of the lower extremities, and ever since then we have watched with the deepest interest the advances or suggestions made in this branch of practice.

Our main object in these remarks, therefore, is to call attention again to the superior advantages of silver-wire ligatures used in the form of the button interrupted suture, in the treatment of the above diseases, which, from the very great success in our hands, is thought to be worthy of further trial by those interested in the subject.

In our first paper, entitled "Application of the Button Suture to the Treatment of Varicose Dilatation of Veins" (New Orleans *Medical and Surgical Journal*, July, 1860), we reported four cases—one of varicocele, and three of varices of the lower extremities. In one of the latter there was associated a large varicose ulcer just above the ankle. Our published remarks on the results obtained in these cases are as follows:

"Although the cure was not completed in the first two cases of varices, still the result of the operation proved itself, I think, sufficiently successful to establish the superior advantages of silver ligatures over the ordinary methods recommended.

"The result of the third case could not have been more satisfactory. It is needless to comment on the result of the operation in the case of varicocele. Suffice it to say, it could not have been more satisfactory. The advantages of the button suture, in the treatment of the diseases of which I am now speaking, may be thus briefly stated:

"1. The innocuousness of the silver wire.

"2. The protection afforded by the button against undue pressure upon the skin in front of the vein.

"3. The facility of adjusting the apparatus, and the great power given the surgeon over the vein, without risk of the wire breaking, as by tying.

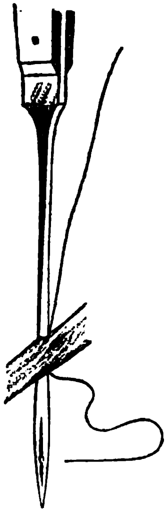
"4. The certainty with which the vein or veins can be cut in two, and their occlusion, with evidently less risk of the dangers attributed to the usual modes of operation."

Now, our button interrupted suture is so well known, we presume, as scarcely to require here an extended account. The modification of the principle, to suit the operation for varicocele, consists simply in the employment of a round, flat disk of lead, about the size and thickness of a nickel five-cent piece, with a hole in the centre, instead of the usual shape, with holes along the middle.

As to the passage of the needle, however, and the exact mode of encircling the veins subcutaneously, ready for the adjustment, a more minute description than the one given in our first paper will not only facilitate a better understanding of this procedure, but also of the one for varices of the lower extremities, of which, we honestly believe, too much cannot be said in praise, on the grounds of safety, simplicity, and efficiency.

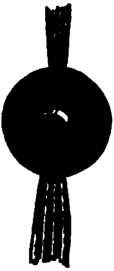
1. The surgeon sitting, and requiring the patient to stand before him, grasps with his left hand the scrotum, the four fingers being behind, and the thumb in front. 2. The separation with the thumb and forefinger of the spermatic veins from the deferent tube and accompanying artery. 3. At the usual point of election transfix the scrotum between the separated parts named from before backward, with a long, delicate needle, carrying in its eye, near the point, the end of a silver wire of suitable length. 4. Now unthread the needle and draw the wire through to its middle, the surgeon still maintaining his hold upon the parts. 5. Withdraw the needle from between the veins and vas deferens, the former at the same instant being allowed to slip from the grasp of the thumb and finger. 6. Carry forward again the needle, now between the veins and the septum of the scrotum, compelling its point to reënter the perforation of the scrotum behind. 7. Thread the needle with the same end of the wire first withdrawn, which should be done by an assistant. (Fig. 1 illustrates the needle held perpendicularly, as well as the third, fourth, and seventh steps of the procedure; in the last, the end of the wire is supposed to be

FIG. 1.



just reëntering the eye.) 8. Withdraw entirely the needle, which brings with it the end of the wire just reintroduced; the loop thus formed is now made to leave the perforation in the skin behind, and take its place around the veins inside the scrotum, with its two ends hanging out together from the perforation in front. Fig. 2, half size, represents the veins with some of the fibres of the cremaster muscle constricted, and the button shield secured in place, with the shot compressed on the wires.

FIG. 2.



The above mode of passing the needle, it may be remarked, does not differ essentially, if at all, from that recommended by Prof. Gross ("System of Surgery"), in his procedure "with a stout cord well waxed," the difference between the two procedures consisting mainly in the substitution of silver wire and its peculiar adjustment for his waxed cord and mode of tying.

The apparatus is allowed to remain in position for from five to seven days, according to the degree of swelling that follows.

The perforated point in the scrotum behind closes almost immediately after the completion of the operation, and the one in front, only occupied by two thicknesses of the wire, is hermetically sealed by the pressure of the button-shield and perforated shot. The constriction, therefore, of the veins is literally subcutaneous, the most favorable condition in which they could possibly be placed.

It may be mentioned here that the first case operated upon by this method was a creole gentleman, aged thirty, of Donaldsonville, Louisiana, who consulted us in the spring of 1859. He stated that he had had enlargement of the veins of the left testicle ever since he was fourteen years old. We found the gland considerably atrophied, and the scrotum enormously elongated. The latter hung down nearly to the middle of the thighs. This was retrenched to a suitable length in a second operation, and the cure thus completed. We verified the permanency of the result by an examination some eight months afterward, when the patient expressed himself entirely satisfied in every particular.

In the spring of 1861 we operated again upon a young man, aged about twenty-five. This case was not of such long standing as the preceding, had only slight elongation of the scrotum, and resulted satisfactorily.

As to our modified procedure for varices of the lower extremities, it is only necessary to say here that it differs from the preceding method in the shape of the needle employed and the mode of passing the ligature around the vein.

Fig. 3 shows the kind of needle best suited to the purpose and its position after transfixion of the skin, with the wire ligature in its eye ready to be drawn through. It is deeply curved and firmly set in a handle. Fig. 4 illustrates the button-shield in place and the mode of fastening it with the perforated shot slid down upon the wires and compressed. The two dotted lines indicate the walls of the vein as constricted beneath the button-shield.

FIG. 3.

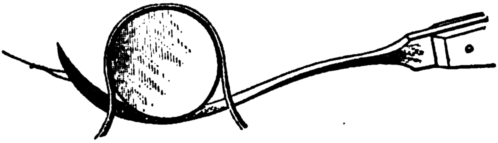
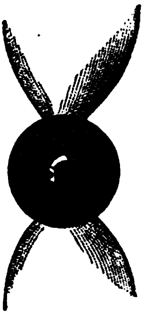


FIG. 4.



In our first and second operations we used the ordinary surgeon's needle, threaded and held in a *porte-aiguille;* but we found this did not work well. The advantages of the one here shown consist mainly in the greater ease of piercing the tissues and of directing its point.

Again, in this procedure two perforations of the skin are made, it being impossible to encircle the vein as in varicocele, where the two ends of the wire are left hanging out through one opening. The distance between these points always depends upon the size of the vein to be constricted. In all cases the point of the needle should be entered close to the vein, and brought out in like manner, avoiding as far as possible the wounding of its coats. But this latter accident, when it does occur, need not cause any alarm, as no serious consequences are likely to result from it. The intervening portion of the integument, therefore, falls within the loop of wire, and, with whatever other tissues that may be included in the sweep of the needle, is necessarily constricted with the vein. The result of this is the formation of wrinkles or folds in the skin, which become the *point d'appui* of the whole force employed in constriction. In such a condition of the skin, irritation and ulceration can scarcely fail to occur under the pressure of an uneven surface of any hard material. Even sloughing and exposure of the interior of the vein, under such circumstances, are liable to occur from improper and undue pressure.

Two pieces of bougie—such a contrivance as that recommended by Prof. Erichsen—will certainly irritate and ulcerate in a large proportion of cases, with silk ligatures especially. In our first operation with silver wire this was the mode of constriction and adjustment, effected simply by drawing the two ends of the wire firmly around the pieces of bougie, and then tying them. Ulceration of the skin at every point of ligature resulted, though the wires did not cut out; and we obtained, owing to this latter circumstance, a very good cure.

Believing, now, this ulceration of the vein and the sloughing of the tissues to be the real causes of many of the dangers insisted upon by writers, we determined to overcome them, if possible.

After seeing the excellent result accomplished with the button-suture adjustment in the case of varicocele just referred to, we could think of nothing in the emergency that seemed to answer so well as this. Accordingly, in the next case, which presented September 21, 1859, in the person of a large negro woman, aged thirty-four, the new adjustment of the ligatures was adopted. The dilatation, here, of the saphena, extended to the middle of the thigh, but in one limb only. Just above the ankle there was an associate ulcer half the size of the hand.

We limited ourself in this operation to the large veins below the knee, intending to finish above the knee at a second sitting.

Five ligatures were introduced and adjusted, as described on a former page. The result proved all that could be wished. There was not the slightest irritation or ulceration of the skin at any point. Complete obliteration of the veins up to the knee was effected. In the course of a few weeks the old ulcer, of sixteen years' standing, healed up, and the patient was discharged. She now felt so much relieved that she concluded not to have any thing done to the vein above the knee. As to the final result, we said in our report: "It has now been about seven months since the operation, and the greater part of the time this woman has been employed as cook, washer, and ironer, using no lace stocking or bandage. A few days ago I made an examination of the affected limb, and found it the same size as the other. The cicatrix appeared firm, not showing the least indication of breaking at any point."

Our third case of varices was a young man, aged nineteen, by occupation a plasterer. He was placed under our care February, 1860, by Dr. J. C. Batchelor, of New Orleans, to which city we had just removed from Montgomery, Alabama. We learned from this young man that he had had enlargement of the veins of his right leg ever since his earliest recollection, and lately he had observed an unusual increase in the enlargement. He did not complain of much inconvenience from this, however, but feared it would ultimately force him to give up his calling. For the latter reason he wished to be cured, if it were possible.

Present at the operation: Drs. Batchelor, Frazier, of Arkansas, and Gilmore, of Mississippi (now of Mobile, Alabama). Five ligatures were introduced and adjusted as in the preceding case—two below, one opposite, and two above, the knee. The result obtained was as formerly stated: "I examined this case a few days ago, it being nearly three months after the operation, and was astonished to find that the obliterated vein had so nearly disappeared. It could be seen only at one point, just below the knee, and here it felt perfectly hard, and was quite movable beneath the skin. The consolidation had extended entirely up to the saphenic opening."

In this case we ventured further, in two important particulars, than in either of the two preceding cases: first, in dispensing with the preparatory treatment of bandaging for several days; and, secondly, operating both below and above the knee at the same sitting. In addition to these advances, the patient, for this operation, was required to stand, in order to give greater prominence to the affected veins and facilitate the passage of the needle.

This completes the reference to our four published cases in July, 1860. It would seem proper, now, to supplement it with some brief anatomical and pathological considerations, as explanatory of the therapeutics which we shall have occasion to refer to again, farther on.

The old anatomical theory of the greater length of the left spermatic vein, and its peculiar mode of entering the corresponding vessel, would seem, presumptively, to explain the cause of the greater frequency of varicocele on the left side; but as it is known to anatomists that, in about as large a proportion of cases, the left spermatic artery is given off from the renal artery of the same side, it may be inferred that this and its capillaries have as much to do with developing the affection in question, in an equal proportion of cases, as the corresponding vein.

The histological investigations of the arteries, veins, and capillaries, within the last few years, have completely upset many old theories as to the causes of disease; and the one under consideration seems to us to require some little modification to make it accord with the present advanced views of physiology and pathology, and of therapeutics. But it is foreign to our present purpose to enter into a lengthy discussion of these points. Suffice it to say that, if the anatomical peculiarities of the spermatic vein on the left side are the only causes that produce varicocele, we ought to see the affection oftener in manhood, thus showing itself under a wider range of circumstances. As it is, however, the class of subjects in whom it is usually met with is small, and in nearly all cases, if honestly confessed, even after manhood is reached, it will be found to have had its commencement in early boyhood, thus proving self-abuse to play no inconsiderable part in the *rôle* of causation. Every physician of any experience, we venture to say, has observed this fact, and is equally familiar with the consequences of the vice upon the nervous system and general health when practised to the extent of causing the affection of which we are speaking.

There is reason to believe that similar results follow the same vice in young, unmarried women, and it seems to us that a more minute and careful study of the influence of the arterial circulation over the genito-urinary organs is necessary in order to explain some of the phenomena usually present in both sexes.

It seems now to be well understood among histologists that there is an antagonism between the circular muscular fibres and the elastic tissue of the middle and external arterial coats, and that the latter is largely deficient in certain arteries; for example, the internal spermatic, splenic, renal, hepatic, brachial, crural, popliteal, and plantar.

Again, in the abdominal aorta on the proximal side of the several trunks there given off, longitudinal and oblique muscular fibres, lying beneath the endothelial membrane, have been discovered, supposed to exercise a constricting influence over the discharging vessel, not only here, but in the branches of arteries generally, given off at acute angles. Remak is said to have found in the aorta of the ox the development of these muscular fibres so marked as to constitute a kind of sphincter.

It will be seen, therefore, that both of these histological peculiarities of the coats of the arteries of the genito-urinary organs exert, necessarily, a considerable influence over the circulation of the blood through them. Exhaustion of these constrictors induces a like condition of the circular muscular fibres of the middle coat from over-distention with blood; and, these being without the requisite antagonism of the elastic tissue in the external coat, become widely dilated, the duration of which depends upon the persistency of the cause, be it self-abuse, excessive venery, ordinary diseases of these organs, or any other acting through the ganglionic system of nerves.

In the corresponding veins, supplied as they are by nerves from the same sources, there is reason to believe the same morbid results follow as to over-distention with blood and exhaustion of their coats, as we observe it externally under the form of *ectasis*.

Now, under these circumstances, the delicate capillaries, whether formed of tubes or protoplasm, according to Stricker, or of scattered or fused polygonal or fusiform cells, embedded in protoplasm, as conjectured by Eberth, must necessarily suffer serious embarrassment or injury. On one side they are compressed by a passive column of blood continually receiving the transmitted impulse of the heart's contraction, and, on the other, weighted down by a retarded column of blood in the veins.

Even under such circumstances, should no actual lesion of their walls or permanent stoppage of the blood-corpuscles result, the increased weight or pressure must cause impairment of nutrition, as we see it in atrophy of the testicle and elongation of the scrotum when the spermatic arteries and veins are involved.

In case of the anomalous origin of the spermatic artery from the left renal, its equal length with the corresponding vein would seem to favor, according to the above views, the development of varicocele on the left side in preference to the right; and, after all, may it not be that the affection only occurs where this anomaly exists?

We do not, insist, now, that ligature of the spermatic veins is the proper and only mode of curing the disease. On the contrary, we think there is much else to be done, in a large proportion of cases, in the way of skilful medical treatment and moral training. When an operation is decided upon, however, we think the mode which we have described is the simplest and safest, and will be found in all cases efficient in causing obliteration of the veins.

We come now to the veins of the lower extremities, as relates particularly to varices. Scarcely need we remark that the internal saphena is by far the most important of all of them, as it is in this the affection is almost always seen, with or without ulcers. The external saphena is by far the least liable to be thus affected, owing to its greater shortness. In its usual course it joins the popliteal vein at the ham, returning the blood along the outside of the leg from the heel and sole of the foot. Sometimes, however, it turns inward and joins the internal saphena, to which it always sends communicating branches along the leg. When this happens its importance is greatly heightened in a surgical point of view, since, being almost entirely exempt in its usual course, it now becomes one of the main branches of the internal saphena, and alike subject to ectasis.

The internal saphena, the longest and perhaps the largest subcutaneous vein in the body, arises from the top and inside of the foot, and ascends in front of the inner ankle along the inner side of the leg, and, passing behind the internal condyle of the femur, continues to ascend on the inner and front side of the thigh until within an inch and a half of Poupart's ligament, where it joins the femoral vein through the saphenic opening in the fascia lata. In pretty much its entire course it lies embedded in connective tissue between the skin and fascia of the leg and of the thigh. It is accompanied in its course by small branches of nerves, derived from the lumbar plexus and crural nerve.

In a general way we may say the veins differ from the arteries in having less of muscular tissue in the middle coat, but a thicker external; also, in having valves. The muscular coat exists as a distinct membrane only in certain veins and parts of veins. According to the presence or absence of muscular fibres, Eberth has divided the veins of the body into the muscular and non-muscular, making, according to their several layers, four groups: first, the longitudinal; second, the internal circular and external longitudinal; third, the internal and external longitudinal and middle circular; fourth, the circular to which the veins of the lower extremities partly belong, being the same arrangement as that of the arteries, less the elastic tissue. The proportionate strength of this coat in the lower extremities and in the umbilical vein, as compared with other parts of the body, is said to be the greatest; then come the veins of the abdominal viscera; next, those of the upper extremities; and, lastly, those of the thorax and neck.

The elastic inner membrane of the veins, although present as a delicate and loose net-work, even in small vessels, is not so strong as it is in the arteries, where it exists as an independent membrane. The endothelial membrane is said to be the same that it is in the arteries.

With this brief explanation of some of the peculiarities of the coats of the veins, we are now better prepared to understand the causes of ectasis, as usually observed in the internal saphena.

Whatever the predisposing causes of varices of the lower extremities may be, the immediate or exciting are well known to be few which are mechanical in their operation. The two most common are pressure of the gravid uterus upon the ascending vena cava, and violent and long-continued muscular effort. Females, therefore, are by far the more liable to the affection in the various forms met with in practice, but males, the least liable to its occurrence, are found oftener laboring under the severer and advanced stages of the disease, owing to the greater persistency of their muscular efforts. Men having to lift and roll heavy weights are particularly liable to the affection, and when of irregular and dissolute habits, as is often the case in this class of laborers, their liability is greatly enhanced. Hence in women the dilatation of the veins seldom results in rupture, and in the establishment of ulcers upon the legs, unless their avocation be such as to call into play strong and persistent contractions of the abdominal muscles, as in the heavy labor of men.

From the operation of these causes, therefore, the returning current of blood in the inferior cava sustains serious impediments through compression of the abdominal viscera, the effect of which is over-distention and dilatation of the veins below, with exhaustion or paralysis of their circular muscular fibres, as we see it in ectases of the internal and saphena veins. The coats of the deeper veins of the lower extremities are protected, and their integrity maintained in a great measure, by the surrounding and overlying muscles. In the veins named, there being comparatively less elastic tissue in the external coat to antagonize the muscular fibres in the middle, dilatation is strongly favored, which usually shows itself to the greatest extent on the inside of the knee and for a short distance below. The knobby and knuckle-pointed elevations observed along the course of the vein are due to the separation of the muscular fibres, and a kind of hernial protrusion between them of the internal tunics. The weakness of the elastic inner coat, with the partial deficiency of the intermediate layer, tends to encourage the protrusion of the epithelial coat which carries the former before it.

When the vein reaches its maximum point of dilatation, the skin will be found to change to a coppery or leaden hue, usually just above the ankle on the inside, and finally to give way from a scratch or blow, or without any assignable cause. There may be at the time a discharge of venous blood more or less profuse, but this soon ceases, and the abraded or broken surfaces sooner or later dwindle into the permanent sore so well known as the "varicose ulcer."

Œdema of the affected limb or limbs follows dilatation of the veins at a more or less remote period, and, though slight at first in the leg, where it usually begins, it gradually extends to the thigh. As long as the connective tissue remains partially infiltrated with serum, the surface readily pits under pressure, and the vein maintains somewhat its increased prominence; but where the disease becomes chronic, as in cases of "old sores" of the legs, the tissues become further infiltrated with a fibrinous material which admits of but little indentation with the finger. In this condition of the parts the enlarged veins are scarcely perceptible to the eye, and their existence can only be made out by passing the point of the index-finger along the course of the main trunks, where it will be found to sink, as it were, into fluctuating sacs or channels, constituting canalization of the veins. This condition of the veins is probably induced by a low grade of phlebitis, resulting in partial and irregular thickening of their coats.

Having now somewhat minutely described the two procedures employed by us in the treatment of varices of the internal spermatic and saphena veins, and pointed out certain peculiarities in the histological arrangement of the tissues of the arteries and veins, with a reference to the pathology and causes of these affections, it only remains for us to show what our success with these methods has been since 1860, when, as previously stated, our first paper was published upon the subject.

In the outset we have to express our regret at having lost our notes (one of the many unfortunate results of the late civi war), and being now compelled to draw on our memory for these additional facts.

Suffice it to say, our opportunities during the greater part of this long period, have been ample for investigation, but it is to our experience as one of the attending surgeons of the Charity Hospital of New Orleans, in the spring of 1861, that we wish to call attention especially. Here nearly all of our operations were witnessed, and the results noted by physicians. Among these we will mention Dr. Holliday, one of the attending physicians, and Dr. A. J. Seemes, then one of the assistant house-surgeons, but now a leading physician of Savannah, Georgia, to whom we are much indebted for unremitting attention in carrying out the after-treatment in these last cases, which contributed not a little to the satisfactory results achieved. To Dr. Smyth, subsequently house-surgeon, and now justly celebrated for the first successful operation on record for aneurism of the arteria innominata, we are also indebted for kindness shown us in December, 1865, when we returned to the hospital to see if any cases had ever been readmitted for treatment. This being one of the largest institutions in this country, our surprise and gratification need not be wondered at when we say that not a single one of them was to be found. Dr. Smyth, who was appointed chief medical officer about eighteen months after these cases were operated upon, expressed his decided belief that none of them had been admitted for further treatment during his term of service, then about three years. The result of this visit to the hospital, coupled with the fact that after the operations we watched unsuccessfully the wards of the institution pretty closely for about a year to find a single returning case, was truly gratifying.

Considering the number of cases to have been about twenty-five, and all of them laborers on the levee, with broken-down constitutions, the result of drunkenness and other dissipation, the record, negative as it may appear, must be accepted as highly satisfactory.

Such was the real state of the case in the surgical wards of the Charity Hospital in the spring of 1861, when we entered upon our term of service there. Out of a lot of five old men with large ulcers upon their legs, presented at our first round

in the wards, one, we distinctly recollect, told us he had been in the hospital off and on for thirteen years, and his statement was fully corroborated by the nurse present, who said he "lived there." The others had not enjoyed their quiet quarters so long, but they were none the less satisfied, seemingly, with their hopeless condition, and with the knowledge of the fact that public charities were inexhaustible.

Of the large number of cases presented from first to last, but few were above the age of fifty, none under thirty, the range being between these two extremes. In a large majority of the cases the enlargement of the internal saphena vein extended to and above the middle of the thigh; and in all these cases the greatest dilatation was just behind the internal condyle of the femur, where it was usually very large and convoluted. The size in a few cases almost reached that of a child's arm. In every case that presented, so far as we can recall to mind, there was associated with the ectasis an ulcer upon one or both legs. Only in a very small proportion of cases were both extremities equally involved above the middle of the thigh. In several cases ulcers were present upon both legs, even where the enlargement of the veins did not extend above the knee. The ulcers varied from the size of a five-cent piece to that of the hand, and were situated almost invariably upon the inside of the leg just above the ankle, though often seen extending below it. There was but little variety in their appearance, it being generally of an indolent character, with smooth, hard, and elevated edges, from which issued usually a thin, ichorous discharge, but sometimes pure venous blood. In all cases there was œdema, slight in some, but generally very considerable. In a few cases fibrinous infiltration of the connective tissue was so considerable that the veins could not be seen or made out excepting by running the point of the finger over the surface of the limb.

Preparatory Treatment.—This consisted simply in clearing out the bowels the night before the operation with a mild cathartic.

Operation.—For the operation, the patient was usually required to stand upon a table, for the purpose of maintaining the prominence of the veins and facilitating the passage of the needle around them. The number of points ligated in a single extremity varied from three to eight, the number always depending upon the extent of dilatation. The greatest number of points tied in any one case was fifteen, seven in one limb and eight in the other, the highest points of ligation being in the upper third of the thighs. In several cases the ligation in both limbs extended up to the middle of the thighs. The average distance between the points of ligation was about three inches. The needle in all cases was first carried around the vein, then threaded with the silver wire and withdrawn, thus leaving the latter in its track. In many instances the needle transfixed the vein instead of encircling it, as shown by the forcible jets of venous blood at the points of ingress and egress through the skin, but the pressure of the finger usually controlled this until the needle could be passed at the next point above, now sunk deeper in the tissues in order to insure complete occlusion. The ligatures having all been thus introduced, the patient was required next to assume the recumbent posture, with elevation of the feet, for the purpose of emptying the affected veins, as far as possible, before constricting them. The adjustment of the ligatures, as heretofore pointed out, was invariably commenced at the lowest one and ended with the highest.

After-Treatment.—This consisted mainly in the recumbent posture, with comfortable elevation of the limb or limbs operated upon; nourishing diet, and in nearly all cases a liberal allowance of whiskey; opium to relieve pain and procure sleep; a light cloth wrung out of a solution containing two ounces of Labarraque's chlorinated soda to a pint of water and applied to the entire limb without any reference to the ulcer. At the end of forty-eight hours, in nearly all the cases, there were diminution in the quantity of ichorous discharge, and a marked tendency of the ulcer to secrete laudable pus. Often, at the end of seventy-six hours, healthy granulations could be seen, with commencing cicatrization. Cicatrization from the circumference to the centre was the rule, excepting one case. Here the ulcer, quite a large one, without previously showing any peculiarity of surface, began to throw up a patch of healthy granulations at the centre, followed by cicatrization which soon extended in all directions until met by that from the circumference. Whether there remained any portion of the epithelium to account for this somewhat extraordinary result, we could not determine. We presumed that such was the case.

The ligatures were, as a rule, removed on the eighth day. In one case, however, they were allowed to remain eighteen days, in order to see whether they would cause any increase of irritation, or cut their way out entirely. In both of these particulars the experiment proved negative. At the end of the period named there were found to be even less irritation and looseness of the apparatus at the points of ligation than at the usual time of removal.

After removal of the ligatures the patient was kept in bed for from one to five weeks, according to the size of the ulcer and its readiness to heal up. The wet cloth was usually continued until the swelling of the limb and tenderness along the course of the consolidated veins had subsided, when it was replaced by a dressing of simple cerate, or some other soothing salve. In all the cases there was a healthy-looking and firm cicatrix with restoration of the limb to its normal size. Along the course of the affected veins there remained a cord more or less firm, according to the nearness of the ligated points and the amount of adhesive inflammation that followed.

Accidents.—Only in one case did an abscess form (patient an Irishman, aged about fifty, and an habitual drunkard), and even here it was not connected with a point of ligation. It was situated about the middle of the leg, on the inside, and seemed to form in a dilated portion of the vein between two ligatures. Little or no febrile reaction ensued, and distinct fluctuation was perceived much earlier than usual, and, when the swelling was lanced, the discharge was found to be principally clotted blood, thus showing a circumscribed phlebitis to exist. A warm poultice was applied, and in the course of a few days (when the ligatures were removed) the swelling in the adjacent tissues had pretty much disappeared, though there remained at this point for some time an unusual degree of hardness.

In another case, of an Irishman, aged about forty, of lymphatic temperament and dissolute habits, who was threatened with delirium tremens at the time of admission, the method was put to the severest test. Here the enlargement of the veins was confined to one limb, reaching to the middle of the thigh, and the associated ulcer was nearly the size of the hand, reaching down on the inside of the leg below the ankle. Some five or six ligatures were introduced and adjusted, and the usual after-treatment commenced. About thirty-six hours afterward, at night, the patient made his escape from the hospital, and nothing more was heard of him until the ninth day, when a policeman found him lying asleep in a back-street. He was found to be so much intoxicated as not to be able to give an account of himself, whereupon he was ordered to be taken to the Charity Hospital. On his arrival there the assistant house-surgeon recognized him at once as the runaway patient, and proceeded to examine the leg operated upon. He found all the ligatures in place, though the limb was considerably swollen, and there was erysipelas of the foot. He removed the ligatures, and ordered warm fomentations to the entire limb, with directions to the nurse to guard against another escape from the hospital. When we made our visit, a few hours afterward, we found no other bad symptoms than those mentioned. The ulcer, it was true, was inflamed, and presented a somewhat irritable aspect, with a free, sanious discharge. But, notwithstanding all this, and incredible as it may seem, there was a small patch of healthy-looking granulations on the upper part of the ulcer, to which we called the attention of several physicians present, all of us agreeing that it was a most extraordinary phenomenon, under the circumstances. In addition to what had been directed by the house-surgeon, we ordered twenty drops of tincture of iron every four hours, one grain of opium every six hours, nourishing diet, with a liberal allowance of wine. Under this course of treatment the erysipelas, in a few days, began to subside, and, soon afterward, the ulcer took on a healthy action. From this time the granulating and cicatrizing processes proceeded uninterruptedly, though, owing to the extensive surface presented, it was about five weeks before reparation was completed. The cure, however, proved entirely satisfactory, and the patient was discharged with a sound limb.

In no case was there an untoward symptom from direct wounds of veins with the needle, nor ulceration of the skin from pressure of the button-shield. The consequences of embolism of the heart or of the pulmonary arteries, though but little understood at that time, were not observed in a single instance; and, if they had been understood, no fears, we think, arising from this cause, need have been entertained, for the reason that all the coagulated blood in the affected veins was effectually shut off from the right side of the heart by the last and highest point of ligation. The same may be said of pyæmia and septæmia, and whether, according to the latest views of different writers upon the subject, that they are distinct diseases, characterized by distinct phenomena, or mere species of the same genus, arising from the same cause or causes, certain it is we did not have the misfortune in any of our operations to witness such results. The nearest approach to it was in the case referred to, when suppuration in a dilated vein between two ligated points occurred; but here the vein was lanced, and the inflammatory swelling terminated kindly, as under ordinary circumstances.

Can as much be said in favor of the more recent proposals of treatment, by injection into the affected veins of a solution of the subsulphate of iron, and by electrolysis? We think not as relates to embolism, especially. The principle of both of these plans is to produce coagulation of the blood in the veins, a condition essential alike to the cure and to the production of embolism of the heart or pulmonary arteries.

If, therefore, in such a large class of unfavorable cases as we have shown nearly all of ours to have been, no such accidents as the above and others described by authors followed the operations with the button interrupted suture, it is fair to conclude that the dangers usually ascribed to other surgical procedures have been greatly over-estimated, or that ours possesses very superior advantages. In assuming this, however, we do not wish to be understood as heralding a great discovery, or claiming any particular originality, but simply as calling attention to the subject, and asking further trials of the method by surgeons enjoying better opportunities for observation than we do at present.

A word, now, as to the principle of cure. Obliteration of the veins—brought about, first, by a clean division, or strangulation and sloughing with the skin and adjacent tissues; and, secondly, by the filling up of the deep sores thus formed with granulations—is, we believe, the generally-received doctrine.

In our earlier operations we entertained the same views here set forth, to the extent only, however, of the silver wire cutting into the vein until it was relieved of the constricting force put upon it. In some exceptional cases we still think this is the real *modus operandi* of the wire when subjected to great and unnecessary force. Subsequent experience, however, taught us that this cutting process of the wire did not obtain in the majority of cases, even to the extent of cutting into the vein, as clearly shown by the firm and steady hold of the ligature apparatus upon the included tissues, at the time of removal on the eighth day. Even in the case heretofore referred to, in which the ligature apparatus was allowed to remain eighteen days, the looseness at the time of removal was so slight as to show conclusively that the vein was very slightly, if at all, cut at the seat of constriction. In the somewhat analogous cases of hæmorrhoids and of polypi of the uterus and nares, it may be contended, and with some show of reason, that the wire does cut and ulcerate entirely through the included tissues. But we may be pardoned for saying that here this fortunate result follows only where the pedicle is very narrow, and instant and complete strangulation follows the application of the wire. If the pedicle is any way large, as we have often seen in hæmorrhoids, and the constricting force as great as it is possible to apply, the circulation of blood in its centre, although obstructed to some extent, still goes on, thus nourishing the tissues outside of the loop of wire; and so it will continue to do until the loop becomes embedded or falls off with its outside slough. Complete strangulation and sloughing off of the offending growth cannot be effected under such circumstances until the wire is tightened up again and again, as every one knows who has had any experience upon the subject, or who understands the *modus operandi* of the double canula. A knowledge of the same important fact cannot, we think, be too highly estimated in applying the short ligature to the pedicle in ovariotomy, whether of silk, catgut, silver wire, or any other material. The difference in results when thus applied, all other things being equal, will be found to depend, there is reason to believe, on the amount of constricting force put upon the loop by the surgeon, whether tightly to favor sacculation, or firmly to insure strangulation and consequent sloughing.

Why is it, then, that the button interrupted suture does not cause strangulation and sloughing of the tissues?

The explanation, we think, is to be found in the facts that silver wire is but little obnoxious to the deep tissues, and that injury of the skin, arising from direct pressure upon it, is effectually guarded against by the button-shield. By the embodiment of these two important principles, subcutaneous constriction and obliteration of the vein are accomplished. The dangers arising from atmospheric influences upon suppurating sores are thus effectually avoided.

The recognition of the advantages of these principles in every-day practice, scarcely need we say, finds illustration in the speedy closure of a simple incised wound, shielded from atmospheric influences by collodion or well-adjusted adhesive strips with roller. And where is the orthopedic surgeon who respects his reputation, that would dare convert the division of the tendo Achillis into an open, suppurating sore?

With these advantages, therefore, the large amount of tegumentary and connective tissues necessarily included in the loops of wire become cushions around the veins, which further protect the latter from harm. Of course, when the surrounding structures are cut through, as is liable to happen occasionally when too much force is applied, as before mentioned, the vein must also yield; but, before this takes place, the wire is usually so far relieved of the constricting force put upon it that no serious injury results.

We believe the action of the apparatus at the points of ligation to be: first, apposition of the walls of the vein; second, the production of adhesive inflammation in the endothelial membrane of the vein; third, agglutination and obliteration; and fourth, while the above changes are going on at the seat of ligation, coagulation of the blood in the intermediate portions of the vein takes place, which finally becomes absorbed, thus leaving in its track from the lowest to the highest ligature a hard and firm cord.

A study of the etiology of associated ulcers in varices in this connection could not fail to be of interest, but these remarks having already so far exceeded the limits originally intended, we can only allude to the subject here in a general way. Suffice it say, there is no fact of clearer proof than that varicose ulcers in the lower extremities stand in the relationship of cause and effect. Equally clear is the proof that a permanent cure of the latter can only be effected by a cure of the former. Remove the cause, and the ulcer is at once divested of its complication. As a natural sequence it heals up, as we have shown, with little or no extra attention, save rest and position.

But, admitting the relationship of the two diseases, it may be said by those opposed to surgical interference, that these ulcers always heal up, subjected to the treatment of rest and position. We answer, this is very true, but the difference between the results of operation and no operation is just the difference between permanent restoration to health and usefulness, and temporary improvement, with the certainty of an early relapse.

If any kind of labor were selected to test the permanency of a cure by operation, none more trying or severe could be chosen than that usually seen performed on the levee in New Orleans, such, for example, as rolling heavy bales of cotton, hogsheads of sugar, etc. And yet, nearly all of our twenty-five cases treated there, at the Charity Hospital, were Irishmen thus employed. Adding to this kind of labor now, bad food, bad clothing, hard drinking, and inattention generally to the simplest hygienic rules, a very correct idea may be formed of the circumstances under which these operations were performed and the success achieved.

It is true these cases were not followed up to prove by ocular demonstration that the cure remained permanent in all of them after they were discharged from the hospital; but is it not reasonable to conclude, we ask, that some of them, at least, would have returned to the hospital for further treatment where so many of them had spent several years of their lives trying to get cured, if they had found it necessary? And yet such was the fact that, for one year immediately after these operations were performed when we ourself watched the wards of the hospital, and for three years afterward, while Dr. Smyth was there on duty as chief medical officer, not one of this large number of cases returned. What better proof or stronger evidence could be adduced to show the permanency of these cures?

From what has now been said, the following conclusions, we think, may be fairly deduced:

1. That varicocele has its commencement in boyhood, though frequently not noticed until after the age of twenty-one, and that it is usually the result of self-abuse.

2. That the old theory of the greater length of the left spermatic vein, and its peculiar mode of entering the corresponding renal, does not fully explain the cause of the affection.

3. That obliteration of the spermatic veins does not always result in a cure of the disease and removal of its effects upon the system.

4. That retrenchment of the scrotum in connection with obliteration of the spermatic veins constitutes a most important part of any system of treatment, and in mild cases is sufficient alone to effect a cure.

5. That for obliteration of the spermatic veins the procedure above described is the simplest, safest, and most efficient, we believe, that can be employed.

6. That varices of the lower extremities in the milder forms are most frequently met with among women; but, in the worst forms with associate ulcers upon the legs, they are oftener seen among men, owing to the heaviness of their labor and the greater persistency of their muscular efforts.

7. That varices with associate ulcers upon the legs are generally found between the ages of thirty and fifty, and that in old subjects, with broken-down constitutions, canalization of the veins is often seen.

8. That varices and varicose ulcers of the legs stand in

the relationship of cause and effect, and that the permanent cure of the latter can only be effected by the obliteration of the former.

9. That varices of the external saphena vein is seldom met with in its usual course to the popliteal, and an. ulcer in its track is thought to be still rarer in its occurrence; but, when it joins the internal saphena in its anomalous course, it becomes much more liable to disease, with ulcers on the outside of the ankle.

10. That varices in the worst forms are perfectly curable with the silver-wire ligature, used in the form above described.

11. That for the operation the patient should be required to stand, as in this way the prominence of the veins is maintained, and greater facility given to the passage of the needle.

12. That when the operation is properly performed it is perfectly simple, and little liable to the dangers usually feared and described by authors.

13. That the transfixion of the vein with the needle and the lodgment of the silver wire there eight days are not liable to be followed by any untoward symptoms.

14. That the wire does not effect complete division of the vein under the constricting force applied to it, nor is it necessary that this or even a partial division should take place in order to insure obliteration.

15. That eight days usually suffice for the apparatus to remain in position, when it is easily removed by clipping off the shot and withdrawing the wire.

16. That ulceration of the skin and exposure of the vein, the main causes of accidents arising from the operation, are effectually guarded against.

17. That obliteration of the vein at the ligated points is due usually to agglutination of the sides of the vein, the result of adhesive inflammation previously induced in the endothelial membrane from pressure of the constricting wire.

18. That the method is applicable to all cases, and the cures in a very large proportion remain permanent even in the worst forms of the disease.

August 6, 1878.

Art. II.—*A New Self-retaining Intra-uterine Stem.* By Ely Van De Warker, M. D., Syracuse, New York.

After the condemnation of the intra-uterine stem-pessary by many of the best gynæcologists, it is with extreme diffidence that I venture to suggest a new form of the instrument. I do so, however, with some confidence, because I feel satisfied that I have reached one explanation, at least, of the unpleasant effects following the use of the stem instrument formerly employed. The stem-pessary hitherto in use was constructed upon one of two principles: either intra-vaginal support, or a support external to the body. Both of these methods of construction embraced a radical error. The error lies in this fact: The womb, in either its normal or diseased conditions, if not bound down by pseudo-membranous adhesions, enjoys a certain degree of movement. These movements consist of changes in altitude, of lateral position, and of angularity. The intra-uterine stem, with either vaginal or extra-vaginal points of support, is held in position without any reference to these normal changes in the position of the organ. The uterus is thus changing its position, or endeavoring to do so, upon a rigid stem, which was either impinging into the fundus or exerting undue pressure upon the walls of the uterus. The body of the uterus was also held too rigidly erect, thus exerting hurtful pressure upon the sides.

The legitimate office of a stem is to correct a flexion of the uterus, not to remove a version. The existence of a certain degree of version is not incompatible with the successful treatment of a uterine flexion. On the contrary, to allow the fundus its freedom of movement during the wearing of an intra-uterine stem is to remove one great source of irritation from its pressure.

Dr. Thomas Chambers, in his modification of the late Dr. Wright's form of the intra-uterine stem, shows to what extent a stem, depending on intra-uterine support alone for its self-retention, may be worn.[1] Dr. Chambers refers to one case in which it was worn for six months. He gives a still more remarkable case in which the stem was left *in situ* for fourteen weeks, during a severe attack of pneumonia, and also through each menstruation during that period.[1] In this form of stem the free movements of the fundus are not restricted, and thus the pressure upon the walls of the organ is reduced to a minimum, mathematically equalling, in a properly-made instrument, a lateral pressure the coefficient of the weight of stem, *plus* the tendency to flexion. However much my reasoning may be objected to, this fact is clear. The intra-uterine stem, with a vaginal or extra-vaginal support, is not, as a rule, well borne by the patient, while the self-retaining stem creates but little if any irritation, by its presence in the uterus.

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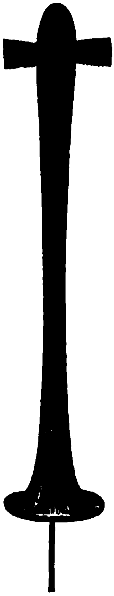
[1] *Obstetrical Journal of Great Britain and Ireland,* No. 1, p. 21.

The objection to Dr. Chambers's intra-uterine stem is its expense, and the rather complicated machinery required for its introduction.



The instrument I have constructed consists of a hard rubber stem, two and a half or two and three-quarter inches long, slender and slightly bulbed at the extremity, the portion projecting into the vagina consisting of a small button of the same material, the edges being rounded so as to ride freely over the vaginal folds. At this end a small hole is drilled for the wire by means of which it is introduced into the womb. The wire is, of course, removed after introduction. The self-retaining portion is very simple and efficient. About half an inch from the intra-uterine end a small hole is drilled, through which a piece of French rubber tubing, one-sixteenth inch calibre, is passed. The ends of the tubing are cut off one-eighth of an inch from the stem, and thus project at right angles. If the internal os is small, a V-shaped piece may be cut out of the tubing, thus reducing its size one-half as it is pressed by the side of the stem while passing through the canal of the neck. After the stem is introduced, the ends of the tubing spring out at right angles to the stem and retain it in position.

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[1] *Loc. cit.*, No. 8, p. 189.

I have had my modification of the self-retaining stem in use about six months, and in every instance it gave perfect satisfaction. Those who have encountered the difficulties in the way of the introduction of the older forms of the instrument will be surprised at the ease with which this can be introduced. Mr. Dawson Tait suggests a cross-section "shred of India-rubber passed through a hole drilled in the zinc," in order to render a Simpson galvanic intra-uterine stem self-retaining.[1] A few days ago I tested this suggestion. I found it was not practical. After a few hours the stem slipped out. There is not sufficient recoil to a "shred" of India-rubber.

For the information of those who wish to test this form of intra-uterine stem, I may state that Mr. John P. Adams, 70 South Salina Street, Syracuse, will be able to furnish the instrument.

ART. III.—*Forcible and Rapid Dilatation of the Cervix Uteri for the Cure of Dysmenorrhœa.* By JOHN BALL, M. D., Brooklyn.

IN a paper read before the Medical Society of King's County, N. Y., June 16, 1873, Dr. Ball gave the following description of the treatment he has found satisfactory in cases of constricted cervix uteri:

My method of procedure is first to evacuate the bowels pretty thoroughly beforehand, so as to prevent all effort in that direction for two or three days; I then place the patient upon her back, with her hips near the edge of the bed, and, when she is profoundly under the influence of an anæsthetic, I commence by introducing a three-bladed, self-retaining speculum, which brings in view the os uteri, which I seize with a double-hooked tenaculum and draw down toward the vulva, when I first introduce a metal bougie as large as the canal will admit, followed in rapid succession by others of larger size until I reach No. 7, which represents the size of my dilator. I then introduce the dilator and stretch the cervix in every direction, until it is enlarged sufficiently to admit a No.

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[1] *Obstetrical Journal of Great Britain and Ireland*, June No., p. 180.

16 bougie, which is all that is generally necessary. Then I introduce a hollow, gum-elastic uterine pessary, of about that size, and retain it in position by a stem, secured outside of the vulva, for about a week, in which time it has done its work, and is ready to be removed.

During this time I keep the patient perfectly quiet, and usually upon her back, which is generally found to be the most comfortable position.

The effects of this operation seem to be threefold: First, by breaking up all the adhesions, which are often very firm and unyielding, it relieves the constriction entirely, and, acting as a derivative, it cures the hyperæmia of the cervix; and, further, it establishes a radical change in the nutrition of the whole organ. For instance, I have operated upon patients who had suffered for years from chronic endo-cervicitis, and when the most gentle touch of the finger would cause excessive pain, when in a few days the sensibility would all be gone, sometimes even before the pessary was removed.

In cases of flexion the relief is obtained by the straightening of the canal, which is produced by a change of the muscular tissues of the cervix from an abnormal to a normal condition. In the rapid dilatation of the parts, the constricting fibres are, of course, lacerated to some extent; and, in healing up around the pessary, must necessarily conform to their new relation. It was in seeking a remedy for this condition that my mind was first directed to this mode of operation; and, finding the relief so prompt and so effectual, and so safe also, I had been led to adopt the same treatment in all troublesome cases of constriction of the cervix uteri, whether complicated with version, or flexion, or otherwise; and the results have been so gratifying that I take great pleasure in laying them before my professional brethren.

It would be unreasonable to expect success in every case, and under all circumstances, yet I do claim for it a certainty hitherto unattained; and it has this one great advantage, viz., the saving of time, as in my hands it will accomplish more in a less number of weeks than it would take months to do by the ordinary methods. And, according to my own experience, it causes much less constitutional disturbance than the use of tents; and I think it safer even than the metrotome, and free from some serious objections to the use of the latter; as, for instance, when incisions are made through the tissues of the cervix, unless carried deep enough to prevent reunion, they must of necessity form a cicatrix, which will interfere, more or less, with the dilatation of the parts. And, when the operation does not succeed, the patient is left in a worse condition than before; while, in the rapid and forcible dilatation of the cervix, there is no sacrifice of the integrity of the parts, and, being done under the influence of an anæsthetic, there is no shock of the nervous system, and generally but little subsequent suffering.

While conscious of running counter to the preconceived theories and practice of the profession, I feel quite confident that future experience will sustain me in the position I have taken.

My first case was one of anteversion, attended with a great amount of flexion.

CASE I.—Miss P., aged nineteen. Commenced her menstrual functions at the age of fourteen, which soon became very painful, and at length her suffering became so intense that life was really a burden to her. She was unable to walk a single block without great pain; and, during her catamenial periods, she would become unconscious, and remain so for several days together, requiring a great deal of care from her friends. Between her periods she suffered almost constantly with pain in her back and head, so severe as to disqualify her for any thing useful.

When she first came under my observation, some months before the operation, I made a digital examination, which was attended with great pain, when I found the walls of the vagina considerably corrugated, and vaginismus so severe that it was almost impossible to reach the os uteri. After treating the vagina topically for a while, the sensibility of the passage was sufficiently relieved to enable me to examine the uterus, when I found the condition referred to above.

In seeking a remedy, my first intention was to divide the posterior lip, according to former custom, when the idea suggested itself to me that laceration might answer the purpose without sacrificing the os externum, as is the case when the knife is used.

Consequently, I provided myself with an instrument, made by Tiemann & Co., on the principle of Thebot's urethral dilator; and, on December 9, 1868, assisted by Drs. Enos and Landon, I operated by dilating the cervix uteri, backward and forward, to the extent of about seven-eighths of an inch. My hope was that, in lacerating the parts so freely, they would, in healing, assume their more natural relation, which, to a considerable degree, I found was the case.

After the operation I kept the patient quiet for about a fortnight, when I was greatly pleased to find that the lacerated parts had healed most kindly, and all tenderness of the cervix and fundus had disappeared. From that time her general health improved very rapidly; her headaches were relieved, and she menstruated regularly without pain or inconvenience for nearly a year; when, as the curvature of the canal was not altogether relieved, her difficulties returned and increased upon her gradually, although not so severe as formerly, yet enough so to cause her considerable pain and inconvenience. I then resolved to repeat the operation, with the addition of the uterine pessary, that had suggested itself in the treatment of some other cases—which I did on May 25, 1870, assisted by Dr. Chapman.

In this operation I lacerated the cervix in every direction before introducing the pessary, let the pessary remain about a week, and when removed the whole organ was found in its normal position, and with a cervix straight enough for all practical purposes; for, after enjoying very good health for over nine months, she married on February 19, 1871, conceived the first month, had a pleasant gestation, and on the following December 7th she was delivered of a fine boy, which is still living.

Case II.—The next case was one of simple stricture, mostly of the os internum. Encouraged by the success of my first operation, I thought I would try its effects upon Miss N., aged about twenty-four years, who had suffered very much nearly all her menstrual life. Her distress at length became so great that she was willing to submit to any operation that would promise relief—even at the risk of her life.

Upon examination I found the os and cervix extremely sensitive to the touch, with considerable hyperæmia. On January 29, 1869, assisted by Dr. Conkling, I performed the same operation as the first one upon the previous case, except that I dilated the cervix in all directions. I would state here that the constriction at the os internum was so great that I found it very difficult to introduce a No. 1 metal bougie. The operation was so far successful that I relieved all the sensibility of the cervix and modified the patient's sufferings to a considerable extent; yet the passage remained too small, and her distress at her periods was still troublesome and inconvenient. Having now had some experience with the uterine pessary, I repeated the operation on the 18th of December following, assisted by Drs. Snively and Housel. But, here I unfortunately had a partial failure, owing to a miscalculation of the length of the stem required to keep the pessary in its place. I applied the same one I had used in a previous case, and thought at the time it would answer very well; but I found upon examination, a day or two afterward, that the uterus had receded and nearly expelled the pessary. The result is, that I shall have to repeat the operation, and hope in the future to be more fortunate.

Case III. *Stricture of Cervix and Os Uteri.*—Mrs. N., aged thirty-three; married about eleven years. Health always delicate. Had suffered for many years with dysmenorrhœa and leucorrhœa; had also ulcerations of the os at different times. No conception; sexual intercourse painful; os uteri and cervix considerably tumefied and very sensitive. Operated upon her February 23, 1869, assisted by Dr. George K. Smith.

She had a pleasant recovery, and her health since then has been steadily improving, and she is now expecting her confinement within a month or two.

Case IV. *Retroversion with Flexion.*—Mrs. B., aged about twenty-eight years; married, and had one child eight years of age. She had suffered much from dysmenorrhœa and leucorrhœa from the date of her confinement, probably the result of displacement of the uterus, which, no doubt, was aggravated by the complete laceration of the perinæum during her confinement. Her health finally became so enfeebled that she was unable to leave her room for nine or ten months previous to the operation, and during her catamenial periods was obliged to keep her bed for several days together. There was a well-marked hyperæmic condition of the os and cervix, attended with great sensibility to the touch.

After trying topical applications and pessaries of different kinds with only partial success, I concluded to adopt the same treatment that had proved so satisfactory in my previous cases, and on September 2, 1869, I performed the operation, assisted by Drs. Conkling and Segur.

The patient was soon after able to leave her room, and since that time has enjoyed most excellent health. She was left a widow soon after the operation; otherwise, judging from her present robust condition, I should expect some well-marked results. I would say, in concluding this case, that I repaired the damage to the perinæum a while after the other operation.

Case V. *Stricture of the Os and Cervix Uteri.*—Mrs. W., aged about thirty-two; married twice, and now living with her second husband. Had suffered many years from dysmenorrhœa and its attendants, which troubles were increasing upon her, and causing her much serious inconvenience: there was a considerable amount of tumefaction of the os uteri and cervix, with much tenderness. Operated upon her, October 7, 1869, assisted by Dr. E. N. Chapman. Operation successful, with health much improved since.

Case VI. *Stricture of Cervix Uteri, with Vaginismus.*—Miss M., aged about twenty-seven years. Had been troubled nearly all her menstrual life with dysmenorrhœa, etc. Health very delicate. I found it difficult to make a satisfactory examination until I had first subdued the vaginismus by topical applications, when the cervix uteri was found to be exceedingly sensitive to the touch, but not accompanied, as in some of the other cases, with much engorgement of the surrounding parts. The principal difficulty proved to be at the os internum, which was very much constricted. Operated upon her November 2, 1869, assisted by Dr. Conkling. Soon after the operation the soreness was all gone, and she has menstruated regularly and with perfect ease since that time. Her general health also improved rapidly. She is now married, and I hope for good results.

Case VII. *Stricture of the Os Internum.*—Mrs. M., from the northern part of this State, aged twenty-seven years; married several years; sterile. Had suffered many years with dysmenorrhœa, but between her periods had been comparatively comfortable. There was some tenderness around the cervix, but not enough to cause her much discomfort, except during her periodical sickness. Having a great fondness for children, she mourned over her sterility, and was willing to submit to almost any kind of treatment that would afford relief. About a year previous to her presenting herself to me, she had been under the care of a celebrated surgeon for about six months, who had succeeded, by the use of the sponge-tents, in dilating the external os and cervix pretty well, and thought he had accomplished his purpose; but, the result proved the contrary, as she experienced no decided relief from the operations, and in a short time was as bad as ever. The failure, undoubtedly, was owing to his not getting through the os internum, which, as I have remarked before, it is an exceedingly difficult thing to do, where the constriction is very great, as I found was the case in this instance. It required a great deal of force to penetrate the os internum with the smallest bougie I have, which is about half the size of a No. 1. The stricture was very firm and unyielding, and required considerable force to break up the adhesions. I performed the operation upon her on the 10th of last March, assisted by Drs. Pilcher and Wm. Otterson. Not an unpleasant symptom followed the operation. She kept her bed for about a week, after which she went around as usual. About a fortnight after the operation her sickness came on, from which she suffered very little comparatively, and no more than would be expected under the circumstances. She returned home soon after this, and I regret that I have not heard from her lately, as I expected to, through her sister who is living here. The last ac counts, however, were very gratifying.

Case VIII. *Anteversion with Flexion, complicated with Serious Disease of the Urinary Organs and Rectum.*—I mention this case, more particularly to demonstrate the safety of this operation under peculiar circumstances.

Miss R., aged twenty-one years. Had been troubled, more or less, with dysmenorrhœa for two or three years past, the result of displacement of the uterus, which, I think, was caused by an attack of metritis, brought on by her own imprudence.

Having some engagement during her catamenial period, she thought to get rid of it by holding her feet in cold water for a while. She succeeded, but paid dearly for the experience. Her menstrual troubles after that increased upon her, yet without any particular complications, until a little over a year ago, when, as her parents were leaving home for a sojourn in the country, she rode over to the depot with them just at the time when the change was coming on. After returning to her home she was seized with a severe pain in the region of the uterus and bladder. Had retention of urine for three or four days, requiring the use of a catheter. This same difficulty returned at each succeeding catamenial period, lasting about the same length of time. I was about proposing an operation for her relief, when, on one of the coldest days of the first of last January, she, in company with some young friends, was out a long while upon the ice, at the skating-pond, listening to the music. The result was a severe inflammation of the uterus, urinary organs, and rectum, causing permanent retention of urine, requiring the use of a catheter for about five months. Her menstrual troubles increased during this time to such an extent that delirium would supervene upon each return, and last for several days, the last time continuing for about a fortnight. Her periodical returns varied from four to seven weeks, averaging about six weeks. Being convinced that the primal difficulty was in the uterus, I concluded to direct my first remedy to that organ. Owing, however, to her low condition, and to the extreme sensibility of the urethra, bladder, and rectum, which still remained, I thought it a matter of *prudence* not to use the pessary at first, lest the stem might possibly irritate those parts and cause cellulitis. I preferred to repeat the operation, if necessary, rather than to take any unnecessary risks. So I merely dilated the cervix uteri, as I had done in my first cases. If I had had the weight of the profession on my side to support me, perhaps I should not have used so much caution. My object was to reduce the congestion and change the nutrition of the parts, which was accomplished to my complete satisfaction. Assisted by Prof. Armor, I performed the operation on the 12th of May, by dilating the cervix in every direction very freely.

Within a few days after the operation all the unpleasant symptoms, from which she had suffered so long, began to subside. In less than a month after, the bladder performed its functions, and has continued to do so since. The disease in the urinary organ is entirely relieved, and only a slight sensibility of the uterus remains. Her general health is improving very rapidly, and she menstruates with very little pain or inconvenience. The flexion is not entirely relieved, and, should her difficulty return, I shall propose a repetition of the operation, with the use of the pessary.

CASE IX. *Antebilateral Version, with Great Curvature and Stricture of the Cervix Uteri.*—I was called, on the 5th of May last, to visit Miss L., aged nearly seventeen years, who was suffering from severe urinary symptoms. Suspecting uterine complications, upon inquiry, I learned that she had been troubled with dysmenorrhœa, more or less, since she was twelve years of age, when her change took place, and had suffered almost constantly with severe pain in the back and head, which had distressed her very much. Although of a full habit, and apparently vigorous, the least exertion would exhaust her and intensify her sufferings. As she was anxious for relief, I made a digital examination, and found the uterus in the condition referred to above—the fundus toward the left pelvis, and the os uteri toward the right. The cervix was flexed in the form of a rainbow, and apparently of about twice the usual length. It had a hard, cartilaginous feel, and seemed to be but a little larger than a common clay-pipe stem. The whole organ was exceedingly sensitive to the touch. After the pressing symptoms were relieved, I operated upon her on the 17th of May, assisted by Dr. Andrew Otterson. The constriction proved to be greater than in any case I had ever met with, and required great force in introducing my smallest metal bougie. I finally succeeded, however, and then followed it, in rapid succession, by others of larger size until I could use the dilator. The force used in the dilatation was so great that a crackling could be distinctly heard for some distance around; and, strange to say, after all this laceration, not one unpleasant symptom followed it. Of course, there was considerable soreness for a day or two, but after that she was very comfortable. In a week after the operation I removed the pessary, when I found the uterus in its normal position, with the cervix shortened to about the usual length, and apparently as straight as in ordinary cases. The next day her periodical change came on without the least unpleasant premonitory symptom, and she has continued to menstruate with freedom and regularity since. Her headaches have entirely left her, and she is now enjoying perfect health.

These are some of the cases that have come under my personal supervision, and to me have proved abundantly satisfactory. I only hope that my experience may not provoke any rashness in others that might serve to bring reproach upon the operation.

Were I asked under what pathological conditions I would recommend this operation, my reply would be, in all cases where any other surgical or mechanical means would be considered advisable, which, of course, must be left to the judgment of the surgeon in charge. I should not interfere, however, in any case where there was acute inflammation of any part of the organ.

NOTE.—An article published in the *Archiv für Gynækologie* (Bd. V., Heft 2), by Dr. Ellinger, of Stuttgart, contains a variety of experiences similar to those of Dr. Ball. Dr. Ellinger employs for rapid dilatation a sort of modified polypus forceps, which are introduced into the narrowest cervix without preliminary dilatation. In case any part of the canal offers any resistance to the progress of the instrument, by separating the arms of the instrument for a few moments the stricture above is found to yield, so that in this way a cervix which offers great difficulties to the introduction of the sound allows the dilatorium to pass with facility. The pain is said to be not greater than that induced by the introduction of the ordinary Simpson sound. In general, dilatation was performed upon office patients, who were afterward allowed to go about their business.

Dr. Ellinger recommends extemporized dilatation: 1. In stricture of cervical canal. 2. Stenosis due to flexions. 3. Metrorrhagia in a flabby, swollen uterus, but without new growths. 4. Retained catarrhal secretions. 5. For exploration of uterine cavity. 6. Replacement of a flexed uterus. 7. Sterility.

Finally, Dr. Ellinger declares that he has never had reason to regret the rapid dilatation, and urges it where dilatation is justifiable at all, to the exclusion of all other methods. W. T. L.

ART. IV.—*Observations on Vitality, and the Relations of the Nervous System to Disease.* By BLAIR D. TAYLOR, M. D., Charleston, West Virginia.

THE wisest of men has said that "there is nothing new under the sun;" I will therefore make no apology for using ideas and definitions well known to the medical professsion, my object being, not so much to write something entirely original, as to call the attention of physicians to a subject of the utmost importance and one which is often neglected.

The tendency of the philosophy of the present day is to deny the doctrine of successive creative acts, and to strengthen the belief in the natural development of life from the forces resident in inorganic matter. We are not prepared, however, to indorse materialism in full, and will therefore restrict the possession of vitality to living things.

All organized forms of matter possess vitality, which, though essentially the same in all, yet varies in degree and manifestations in different classes of being. What I mean to imply by the terms here, is not merely that attribute of the organized being which constitutes life, and insures the normal performance of all the functions in a state of health, but I wish to include, further, *that power by which living organisms, when attacked by disease, resist the approach of those changes which constitute death.* It may be said that this is a distinction without a difference, and the difference is really one of degree, there being something more than is necessary to preserve life at a fixed standard, with no power of recuperation or repair. We may regard *vitality* as the continuous expression of the *original formative force* which caused inorganic matter to spring into life, and indeed our bodies are merely chemical combinations of inorganic elements, whose union is preserved by the vital principle. This principle manifests itself in health by growth, development, and maintenance, and in disease by restoring the energies of the system depressed by morbid changes, repairing solutions of continuity and structural lesions, and readjusting the normal balance of all the natural functions.

Vitality first manifests itself in the segmentation of the impregnated vitellus and the formation of the blastodermic membrane. The first act of the original formative force directed toward the construction of a definite framework is apparent in the "primitive trace" of the embryo, the foundation of the brain and spinal cord of the future adult. Now, this early development of the nervous centres indicates where we may expect to find the *reservoir of power* which ministers to the vitality of the individual in after-life. The measure of vital energy, therefore, resident in the nervous system, is the measure of the vitality of the whole being.

Every simple organism forming part of a complex one has a vitality of its own by which it can live for a time when isolated; but, it is also endowed with a life common to it and the other constituents of the complex whole. As the individual recedes from complexity to simplicity of structure, the vitality of the part is less merged into and less dependent upon that of the whole; in fact, it is increased by being limited to but few constituents, and the lowest forms of embryonic life are almost incapable of destruction.

The vitality of man is compound; it is not that of a part, but of a whole made up of many parts, yet it is not the sum of the separate vitalities of its constituents, but depends for quantity and quality upon the perfectness with which the individual atoms are connected, harmonized, correlated, and coordinated, into an entity whose life is the *vitality of the nervous system.*

The vital existence of the *whole* comprehends the embodiment of *mind*, *force*, and *matter;* that of the part depends upon the operations of original formative force on matter. The ultimate elements of the human organism cannot, however, preserve their vitality for any length of time, unless the force which animates them be continually transferred from the worn-out particle to the new one, which is to take its place, and constantly renewed from the central reservoir of life. "Molecular life," therefore, "continues but a short time after somatic death" (Carpenter).

A word becomes necessary at this point to define the limits and bearing of the term "force," as here employed. It is a dynamical agent, and we can only conceive of it as in a state of constant activity—examples of the expression of forces are readily found in magnetism, electricity, gravitation, etc.; but the particular force with which we are dealing constitutes the motive power by which the germ is developed into the perfect being, and the molecular changes necessary for the maintenance of the life of the individual afterward carried on. In addition to this, there exists in the healthy individual, as an element of his vitality, a sufficiency of *latent force* to meet special emergencies.

The analogy between mind and force is very close. The former, like the latter, is a dynamical agent, and exists only in a state of constant activity. But mind, unlike force, is subject to no fixed law by which we can predict with any certainty what will be the character of its manifestations under given conditions. We can hazard no conjecture as to what emotions, ideas, or sensations, will arise in different individuals under the same circumstances, or even in the same person under like circumstances at different times. Still more inconstant are the numberless ways in which mental states influence the physical condition of the body in health and disease. Every man is "a law unto himself" in this respect, and it is only by a close study of intellectual and constitutional peculiarities that we can arrive, in each case, at the particular influence a mental condition will exert. The history of disease presents a record strikingly similar. A morbid condition will vary in its history, symptoms, and severity, with the peculiarities of the individual affected. His station in life, education, business, habits of thought, temperament, in other words, all of his mental, moral, and physical peculiarities, exert a specific influence over whatever disease with which he may be affected. Books lay down pathognomonic and diagnostic symptoms, and give us a stereotyped model for each class of affections; but in practice we very rarely find two cases of the same disease exactly alike, and still less do we find that they require the same treatment. This parallelism between the erratic manifestations of morbid conditions and the nervous force tends to confirm the belief that the latter exercises a powerful influence over the former.

The nervous system exercises its influence over the whole, both in health and disease, chiefly by the manner in which it controls and directs the molecular changes of matter. The original formative and developmental force resides in the great nervous centres, and its flow thence regulating nutrition, secretion, automatic muscular action, etc., is subject to all the sudden and variable influences of emotion, idea, and sensation. The tears of grief, the blush of shame, the pallor of fear, and the cardiac prostration of fainting, to say nothing of the atrophy which follows loss of innervation, exemplify the potent influence exerted by purely mental states and loss of nervous connection on the glandular and vascular apparatus and the process of assimilation.

Now, if mental conditions are competent to produce local congestion or anæmia, failure of the heart's action, increase or diminution of the secretions, as long as they exist, why would not the same mental state be competent to produce disease, if it were persistent? and, if it be capable of actually generating a morbid condition, who can deny its powerful influence over the same condition when produced by some other agency?

The three elements of which we have been speaking, mind, force, and matter, are intimately blended and interdependent in the human organism. Although mind and force do not depend for their existence as such upon matter, yet they cannot remain combined in an entity without its presence and co-operation. Thus we see that inorganic materials animated by these two imponderable agents become the medium through which their existence is rendered apparent, and constitute the pabulum which nourishes and supplies the waste of material consequent upon the continuous activity of the dynamical and intellectual agencies.

That an exact balance should exist and be maintained between these three constituents of our being, is necessary for the health of the individual; and just in proportion as this equilibrium is perfect, so is the power of resisting the inroads of disease and the advent of death.

As a rule, those persons in whom the purely dynamical agency bears a just proportion to the other elements, stand sickness best, and are aptest to recover. I mean that it is more deleterious to the vitality of the individual to be wanting in the due proportion of force than in either of the other elements.

That attribute of the mind called "will" is the representative of force, in the intellectual principle; add to this moral, emotional, and reasoning faculties, and we have what we call the "mind."

Now, strength of will does not necessarily accompany great intellectual powers, and a weakness of this dynamical agent lowers vitality. Nothing, however, tends to lower the vitality of the individual so much as an excess of *matter*. Excessive muscular development, or a large quantity of adipose tissue, establishes a tremendous drain on nervous energy by constantly calling for supplies of force to superintend the processes of digestion, assimilation, secretion, and, in fact, all the molecular changes subservient to the nutrition of the body. Such a constant and tremendous call for nerve-force soon diminishes the capacity of the great centres to meet its demands, and, the first time any extra energy is required, the brain or the heart gives way, and the patient is dead.

My own actual experience (and I think that of many others will confirm it) is, that fat men, and those who stimulate and exercise their muscles to the utmost pitch of development, seldom bear sickness well.

How frequently we hear of athletes, and men who row in boat-races, breaking down utterly when called upon to make a *sudden effort* beyond what their automatic training has accustomed them to! It is only when this call for extra nerve-force to meet a sudden emergency is made, that we find the citadel of life sapped at its foundation, and the vitality of the nervous system irremediably gone. I might cite the case of James Renforth, who died suddenly in the Canadian boat-race, while making a "spurt," in illustration of the argument just advanced. We may also learn from this that no opinion can be formed of a man's vitality or endurance by merely observing the robustness of his appearance. Looks are very deceptive in this respect, and we can only arrive at the truth by investigating the habits of life, character, and relative development of mind, force, and matter.

The medical profession are too apt to undervalue the influence of the nervous system in disease, and many, who admit the theory, disregard it in practice. When we consider that the great nervous centres and the ramifications therefrom embody the two most important principles of life—mind and force—we at once recognize the necessity of paying the strictest attention to its irregularities in every case of disease. How many fold are the chances of recovery increased when the patient is hopeful and confident in the skill of his physician, and how disastrous is the opposite condition of despondency and want of faith in the treatment! The attention of the patient should be distracted as much as possible from the seat of the disorder; this is a very important point, for it not only tends to promote cheerfulness, but, by diminishing the quantity of intellectual and dynamical force directed to the diseased part, the vascular supply is lessened, morbid molecular changes diminished, and a real sedative influence exerted on the affection.

The nervous system must also be taken into consideration with respect to the influence which it exerts over the action of remedial agents. Nearly all the idiosyncrasies with regard to medicines are due to peculiarities of nervous organization, and the known physiological and therapeutical action of a remedy has been known to be *reversed* by a preconceived notion of the patient that the medicine was intended to produce such an effect. Again, in a large majority of the class of functional disorders, the nervous system is at the bottom of the trouble, and the treatment must be almost exclusively mental and moral.

The observations heretofore advanced furnish valuable indications for the employment or withholding of one or other of the two great classes of remedies—excitants or depressants. Beware of being guided by the name of the disease and the appearance of the patient, in deciding the question as to whether you will stimulate or deplete. It is not every robust-looking man who will bear depletion, nor every one, apparently delicate, who requires stimulants; we should rather investigate closely the previous history of the case, the habits, education, and character, of the patient, his present condition, and every concomitant circumstance which will aid us in forming a just conception of the *vitality* and amount of *latent energy* belonging to this particular person. When once you have gauged your patient's power of resisting the approach of death, and of repairing the damages of disease, you have a surer guide to the choice of remedies, in *this particular instance*, than any study of the disease as described in books can ever furnish. The man whose nervous system is impaired, does not grapple successfully with the depressing influences of disease. This fact is well illustrated by the readiness with which hard drinkers succumb when suffering under an attack of sickness. This class of patients, however healthy they may appear, are specially deficient in *vitality;* they never bear depletion well, and the prognosis is tenfold more unfavorable than in a person of temperate habits, other things being equal. A patient under the influence of depressing mental emotions will rarely stand a further diminution of nervous vitality, however inflammatory be the affection.

In short, the weakened and depressed condition of the nervous system, consequent upon the causes just enumerated, and also upon the habitual use of opium, chloroform, etc., is perfectly analogous to the "shock" produced by severe surgical injuries, and is really nothing more than "shock" in a minor degree.

No one thinks of depleting a patient when suffering from "shock;" yet the analogous condition just mentioned frequently occurs in practice, and is utterly ignored, its importance being obscured by the *name* of some inflammatory disease, as pneumonia, etc.; in such cases, the most violently depressing remedies are at once resorted to, and the nervous force, already feeble and shattered, too often succumbs to the combined effect of disease and remedy.

Clinical Records from Private and Hospital Practice.

I.—*Report of the Surgical Cases treated in the St. John's Riverside Hospital, Yonkers, N. Y., during the Year* 1872. (*Third Year.*) By J. H. Pooley, M. D., Surgeon to the Hospital.

In presenting this my third annual report of the surgical practice of this suburban hospital, it affords me sincere pleasure to record its continued and increasing prosperity, and ever-widening sphere of usefulness.

Since my last report, Dr. Benedict has dissolved his connection with the hospital as house physician and surgeon, and entered into private practice in this place.

The vacancy thus occasioned has been ably filled by Dr. G. P. Balch, formerly of Plattsburg, N. Y., now in practice here, and whose residence is directly in the rear of the hospital building, who entered upon his duties as house physician and surgeon June 3d, and at the same time organized an out-door department, holding a daily clinic from 9 to 10 A. M.

In this department there have been treated, from its commencement to the end of the year 1872, 182 patients.

The number of surgical patients treated in the hospital this year has been larger than in either of the previous years, viz., 63—in 1870 there were 25, in 1871 there were 58.

These cases have been divided as follows, viz.:

Fractures (of various kinds)	8
Contusions and contused wound	5
Burns and scalds	5
Injuries of the head (without fracture)	5
Ulcer of the leg	4
Fracture of the skull	3
Lacerated wound by machinery	3
Inflammation of the knee	2
Adenitis (with abscess)	2
Frost-bite	2
Wound of the eye	2
Gunshot-wound	2
Paronychia	2
Syphilis (secondary and tertiary, 1 each)	2
Punctured wound (dog-bite)	1

Pott's disease of the spine	1
Fibrous tumors of uterus	1
Bursitis of knee	1
Hæmorrhoids	1
Trachoma	1
Abscess of femur	1
Scabies	1
Lacerated wound of ankle	1
Rupture of muscle	1
Anchylosis (false)	1
Inflammation of lymphatics (lower extremities)	1
Injury to chest (from fall)	1
Abscess of mamma	1
Hip-disease	1
Sprained ankle	1
Total	63

Of these 63 cases there have been—

Discharged cured	47
" improved	7
Died in hospital	6
Remaining under treatment	8
Total	68

The operations performed this year have been, exclusive of those of minor importance, seven in number, as follows:

Gouging out bone-abscess	1
Trephining	1
Enucleation of eye	1
Amputation of forearm	1
" leg	1
" part of hand	1
" " foot	1
Total	7

These have all been successful except the case of trephining, in which the patient was nearly moribund at the time of operation, but, it was advised as his only chance, by a full consultation.

There have been five cases of burns or scalds, injuries always common in hospital practice, and by no means rare in the experience of any practitioner, and with regard to which the general principles of treatment are tolerably well settled, although the means by which these general indications are carried out are extremely numerous, almost as numerous as the hospitals or practitioners by which they are treated. Although I have nothing new to offer, and although the subject is so trite a one, there are still, I think, points of sufficient interest in four of our cases to be worthy of detail—in the first from certain secondary pathological results, in the second from a point in treatment, and in the other two from the mode of injury.

CASE I.—George Meach, aged thirty-nine years, occupation railroad engineer, admitted to hospital March 4, 1872. The previous November he was extensively burnt by the sudden escape and ignition of coal-gas from a locomotive furnace which had been tightly shut up overnight. Almost the entire surface of his body, except the legs, including face, chest, arms, abdomen, and thighs, was burnt to vesication, and, as he describes it, he was one complete scab. At the time of his admission his burns were nearly but not completely healed, only smooth, striated cicatricial tissue remaining to attest the fearful extent of cutaneous destruction. He was suffering principally at this time from universal anasarca and œdema of the lungs, which had come on rather suddenly a fortnight before from exposure to cold. Physical examination: Pulse, 72; respiration, 20; temperature, 100½; lungs œdematous, particularly lower lobes; heart apparently healthy, but impulse very weak; urine acid, bloody, specific gravity 1,010, very albuminous, with granular casts and blood-globules.

Appetite poor, bowels regular. Has had an attack of cellulitis in the right leg, which has burst and is now discharging pus. He was ordered a bath, rest in bed, milk and farinaceous diet, one drachm of pulv. jalap. comp. and fifteen grains of acetate of potash every three hours. Owing to the unnatural condition of his skin, no derivation or depuration could be expected from this source, hence our remedies were directed to the bowels and kidneys.

March 6th.—The amount of urine, which has been carefully estimated, has increased during the last twenty-four hours, and is, he says, much larger than before his entrance to the hospital, nevertheless the patient does not seem any better; he is somnolent, dyspnœa troublesome; the inflamed leg discharging very inefficiently, it was freely opened in two places and a large quantity of pus evacuated, after which a flaxseed-poultice was applied; treatment continued. The increased secretion of urine proved to be very temporary, and from this time it daily diminished, though the acetate of potash was given in increased doses and combined with infus. digitalis; this latter drug was given in small quantities, owing to his feeble heart.

10*th*.—Patient much worse, anasarca increased markedly, passes less and less urine each day, rested but little last night, owing to his cough, which was very troublesome; to-day dyspnœa is so urgent that he cannot lie down; he is evidently failing.

11*th*.—He died this morning rather suddenly. About an hour before death he tried to stand, but complained of feeling dizzy, and came very near falling on the floor. He was placed in bed, and soon after passed into a comatose condition, with great blueness of the face, and quietly expired. No *post mortem* could be obtained.

This case is certainly a very unusual and interesting one. 1. The extent of superficial burning, comprising almost the entire surface of the body, except that part of his legs protected by his boots, from which this man so nearly recovered, is remarkable; it being well known that the danger of burns is proportioned more to the extent of surface involved than to the depth or severity of the burns themselves. It is ordinarily estimated that one-third of the surface is so dangerous as to be almost always fatal, and here there must have been nearly seven or eight tenths involved; but, as perhaps as I should have mentioned before, this man was of herculean frame and splendid physique, and had always enjoyed perfect health. 2. The functional destruction of so much, or even of much less integument, calls loudly for great and prolonged care and solicitude, for the skin is not merely an external covering to the body, but a very important, almost vital organ as well. If this poor man had persisted in the necessary care of himself until the return of warm weather, and had not foolishly exposed himself to cold, he might have escaped. 3. I cannot doubt that the philosophy or pathology of this case was essentially the same as that of the nephritis and anasarca following scarlet fever. In the latter disease it is during the process of desquamation, while the old skin is being thrown off, and before the new is capable of succeeding to its function, that the danger of this dreaded complication arises, and against which the careful physician so sedulously guards. The case of our patient was analogous, but even more full of peril, for the skin-destruction was more complete and profound, and we were virtually deprived of the benefit of hot-air and steam baths to stimulate its action, those sheet-anchors in the treatment of scarlatinal dropsy. I do not remember to have read or heard of any case similar to the one thus briefly narrated, but it adds another to the possible dangers, already numerous enough, that surround cases of severe burn or scald.

Case II.—Jane English, aged ten years, native of Ireland, admitted September 20th. Four days previous to admission, she was severely scalded with hot water on the calf and thigh of the right leg; the thigh was involved extensively, both anteriorly and posteriorly, only the hollow of the popliteal space escaping, the calf of the leg was scalded nearly down to the tendo Achillis. Before admission it had been dressed with carron-ol.—linseed-oil and lime-water; the epidermis was all removed, and there was extensive superficial ulceration, with that peculiar mammillated appearance so familiar in burns at this stage. The edges were beginning to heal in some places; the suppuration was very profuse and somewhat offensive. The limb was very much drawn up, not from the depth of the injury, but, if I may so express it, from muscular fear. The raw surfaces were dressed with a solution of sulphate of iron, one drachm to one pint, which had the immediate effect of diminishing discharge and fetor.

25th.—A Smith's anterior splint was applied, to straighten the limb, and it was swung from the ceiling to relieve the pressure from the bed. Suppuration very moderate, sores rapidly healing.

27th.—Leg straight, and doing well in every respect.

29th.—Healing rapidly; in some spots where the scald was deeper than the rest, there were some exuberant granulations, which were freely pencilled over with nitrate of silver; this was repeated several times at intervals of a few days.

October 14*th*.—Discharged perfectly well.

This patient I have seen within a few days; she has no contraction of the limb, though there are numerous bands of rather rigid cicatricial tissue.

This case is introduced mainly to recommend the employment in similar ones of the lotion used in this—the solution of sulphate of iron. Everybody knows how troublesome and protracted these large superficial suppurations from burns are apt to be, the treatment often extending over many months, the discharge profuse, so much so at times as to be exhausting, and the odor, particularly in hot weather, by no means agreeable, while the extreme sensitiveness of the surface renders each dressing a torture, not only to the patient, but to the physician as well. I have had my full share of the annoyance and perplexity of such cases, and have tried, I verily believe, nearly all the remedies that have been suggested, and think I am in a position to declare that this which I now recommend is by far the best of all. It is a very good disinfectant, and in these cases diminishes the odor quite sufficiently—better even than carbolic acid, for it has no disagreeable smell of its own to be discounted for, it dries up the excessive discharge in a most prompt and admirable manner, in fact, in the case just recited it was reduced fully one-half in the first twenty-four hours; it hastens the granulating and cicatrizing processes, which in these cases seem to be retarded almost indefinitely by the profuse discharge. The lotion gives rise to some smarting when first applied, but this soon passes away, and so much is the general comfort of the patient promoted, that this soon comes to be disregarded even by children; it should be applied on cloths well wetted, and renewed every two or three hours; it is well to protect the bedclothes, for the stain is well-nigh indelible. It is not often that I commit myself to the ardent recommendation of any special application, but this seems to me so well worthy of it that I have departed from my general rule in its favor. I will merely add that, to obviate contraction in such a case, Smith's anterior splint is a capital appliance, and did us very good service.

Case III.—William Terry, aged twenty-one, native of Yonkers, admitted November 25th. Just before his admission he was injured by an explosion of nitro-glycerine, some cans of which he and his thoughtless companions had found concealed in the woods near the line of the new Boston and Erie Railroad, and exploded by throwing stones at them. Two of the party were killed on the spot, being literally blown to pieces. His clothing was almost completely torn from him, as though the air driven by the violence of the explosion had rushed up the legs of his pantaloons and burst his clothes away. He was found stunned and partially insensible and brought to the hospital. Almost the whole surface of the body was covered, peppered as it were, by small fragments of gravel, twigs, dried leaves, etc., driven violently into but not through the skin, and here and there were burnt spots, red and partially vesicated. This was particularly the case about the face and neck, which were slightly swollen.

He had also a wound of the left eye, about a line in length, to the outer side of the sclero-corneal junction, it did not pass deeper than the sclera; there was no evidence of any foreign body in the eye. He complained also of deafness and pain in the ears, but there was no discoverable lesion.

He was kept in bed, and pressure bandage with atropine instillation ordered for the eye, and douches of warm water for the ears. Under this treatment he progressed satisfactorily until December 2d, when, notwithstanding our advice to the contrary, he insisted on leaving the hospital.

I have since heard that he has had trouble with his ears, but know nothing of its precise character.

Case IV.—John Donnelly, aged nineteen, native of Yonkers, admitted November 25th. He was injured at the same time and place as the last patient. He was injured in a similar manner to his companion, but more severely; he was cold, pulse small and feeble, suffering slightly from shock. He was put to bed, warmth applied to the surface, and stimulants administered. He reacted well, and next day was found to be deaf, and complained of very severe pain in the ears; upon examination, both membranæ tympani were found to be ruptured, one transversely, the other almost longitudinally. From the extensive though slight injury to the skin, some swelling and fever set in; but, although advised to remain longer, he insisted on going out the same day as his companion, December 2d.

It would have been interesting to have watched the progress of his ear-lesion, or even to know exactly his present condition; doubtless the ruptures in the drum-heads healed readily enough—they generally do—but whether the concussion by which they were produced has left other and less remedial effects is not so easy to say. These two were hardly cases of burns, but, as there were some slight injuries of that nature, and as it was easier to range them here than elsewhere, let them stand; the way in which they were peppered with flying *débris* was very singular, and, evidently, had they been but a little nearer, they would have shared the fate of their comrades.

Of injuries of the head uncomplicated by fracture of the skull there have been five cases, including one of very extensive scalp-wound extending entirely across the vertex from ear to ear, which recovered rapidly, notwithstanding the presence of active delirium for some days gave us considerable anxiety. Another of these cases, however, though apparently less severe, did not terminate so happily, the patient dying in four days, though there was neither scalp-wound nor fracture.

Case V.—Peter Tait, aged forty, native of Scotland, admitted October 19th. He was a very large man, weighing considerably over two hundred pounds, and a short time before his admission he had fallen from the roof of St. John's Episcopal Church, where he was at work (a distance of about thirty feet.) He was insensible when taken up, and was immediately brought to the hospital; on the way some blood issued from his mouth. On his arrival he had partially recovered consciousness, he was cold, covered with perspiration, and complaining severely of pain referred to the umbilical and right lumbar regions; pulse 100, weak and small; during the day he became quite insensible, with loud, stertorous breathing.

October 20th.—Pulse 120; respiration 28, and stertorous; breath singularly offensive; insensibility profound; bladder was distended, relieved by catheter; urine free from blood.

21st.—Coma deep; paralysis of right side; stillicidium urinæ; several ecchymotic spots observed on the abdomen and back; pulse 140, temperature 102°.

He lay in this condition without any change until the 23d, when he died, at 11 A. M.

Post mortem.—Body well nourished; no *rigor mortis.* Upon the left hemisphere of the brain there was a large effusion of blood, partially coagulated, and covering the entire hemisphere, about as large as the hand, which lay directly under the dura mater. There was no other lesion of the brain, and no fracture of the skull.

Upon the convex surface of the right kidney there was a small rupture or laceration, not more than a quarter of an inch in length; from this there had been a hæmorrhage of perhaps half an ounce, certainly not more, into the surrounding tissues.

There were three cases of fracture of the skull admitted during the year: one died in two hours after his admission, and there was no *post mortem;* the other two present some features of sufficient interest to justify relating them in detail.

CASE VI.—Thomas Barry, aged thirty-two, native of Ireland, laborer, admitted June 26th, 3.30 P. M. He had been struck on the posterior and inferior part of the left parietal bone by the falling of a derrick, producing a wound two inches in length, the guy-rope breaking, and the boom, falling a distance of about thirty feet, struck him on the head. A doctor was called, who accompanied him to the hospital, and then, finding none of the medical attendants in, proceeded to cut off some hair around the wound, introduce some sutures, and plaster it up with some strips of adhesive plaster. At 4 o'clock I saw the man: he was insensible; breathing regular; pulse 65 and regular; removed the plaster, but, as the doctor who had sewed up the wound reported that he had examined the cranium and there was no fracture, did not remove the stitches.

The wound in the scalp was T-shaped, the long portion extending toward the mastoid process. Cold was applied to the head. At 7 P. M. he became unruly; there was no paralysis, he moved both arms and legs equally well; he moaned slightly; slight ecchymosis under the right eye.

June 27th, 9 A. M.—Remains in about the same condition as reported last night; removed the stitches and found a depressed fracture of the skull; at 3 P. M. called a consultation of the hospital staff, and all agreed that trephining was the only chance for the patient, as he was failing rapidly.

I accordingly operated at once. The administration of ether was begun, but, as it was found that he was insensible to pain without it, it was discontinued. Although the depressed portion of bone was fairly elevated, it gave no relief to the symptoms. About forty minutes after the operation his breathing became labored and grew rapidly worse, his pulse was 65 and regular; suddenly he became cyanosed, and respiration ceased, but his pulse continued to beat regularly for fifteen minutes after the cessation of respiration, during which time artificial respiration was kept up, when it too stopped, and all was over. No *post mortem*. It seems highly probable that the operation hastened the death of this poor man. The fracture I suppose extended to the base of the skull, and here probably there had been some hæmorrhage, which had been stayed by the formation of a clot. This being disturbed by the jar of the operation, fresh bleeding quickly involved the respiratory tract, hence his sudden death, and hence, too, the mode of it.

The following case occurred during my absence on a summer vacation, and the account of it is transcribed from notes taken by Dr. Balch, the house-surgeon, under whose care the patient was:

CASE VII.—Jane Dowd, aged twenty-one, native of Ireland, unmarried. At 6.30 P. M., August 22d, she was thrown from a buggy; at 9 P. M. she was first seen by Dr. Balch. Examination revealed a triangular wound over the outer angle of the left eye; each side of the wound about one and three-quarters inch long; the supra-orbital artery was wounded and bleeding quite profusely.

Further examination showed a fracture of the left external angular process of the frontal bone, with brain-substance exuded into the external wound to the amount of about one drachm. There had been no coma or other brain-symptoms; she arose and walked from the place where she fell to the house without assistance. The condition of external surroundings made it next to impossible to operate on the spot. She was, therefore, removed to the hospital, a distance of about two miles. At 1 A. M., the 23d, she was chloroformed, and, deciding it unsafe to wait for daylight to operate, as the fragment of bone was pressing upon and into the brain, and might excite inflammatory action, the doctor at once operated by enlarging the wound at its outer and lower angle, and exposed the fractured bone which was driven into the brain, making a very marked depression of about three-eighths of an inch. The fragment was entirely detached and loose. It was removed with an elevator and a pair of tooth forceps. Considerable force was required, as the fragment was firmly wedged in, its edges being bevelled from without inward. The fragment removed included a portion of the superciliary ridge, temporal ridge, and supra-orbital plate; it was triangular in form, each side being about one inch in length. Before the operation the pulse was 100, regular and full in the right radial artery, in the left irregular and weak. After the operation pulse was 82 and regular. The dressing ordered was cloths laid on ice and then applied to the head, to be changed every twenty minutes.

August 23d, 8 A. M.—Slept quite well, waking occasionally; not delirious; has complained of no pain except in the back, which was somewhat bruised by the fall; pulse 88, regular, somewhat weak, probably from loss of blood, which was considerable before the operation, none since; application of cold cloths ordered to be continued. 1.30 P. M., pulse 84, temperature 99⅕°; no headache, feels well, and sleeps a good deal; bowels constipated. ℞. Sal. rochelle, ℥j, to be taken immediately.

24th, A. M.—No fever; temperature 99°, pulse 80; bowels have been moved; P. M., put in two sutures at the upper part of the wound.

25th.—Temperature 98⅗°, pulse 80; feels well, no pain in the head, ecchymosis disappearing from about the eye. ℞. Sal rochelle, ℥ss., at bedtime; slight discharge from the wound.

September 2d.—Has continued to improve, wound granulating and healthy; put in another stitch and applied adhesive plaster to draw the edges together; cold dressings continued, but not so often as at first.

9th, A. M.—External wound nearly healed. Has not slept well for two nights, has frontal headache, looks very pale, no appetite, has been vomiting. The pain in the head is not confined to the wounded part; bowels constipated; pulse 80 and small. ℞. Hydrg. submur., grs. x, at once. P. M., no vomiting since morning; bowels have been freely opened; pulse 80 and moderate in volume, temperature 99. ℞. Quinine, grs. ij, every four hours, to commence when the headache ceases. ℞. Pulv. Dover., grs. x, at bedtime.

10th, A. M.—Slept well through the night; tongue coated; no appetite; no headache to-day, some soreness about the wound; pulse 76, temperature normal.

18th.—Complains of ringing in the ears; examination revealed a large amount of wax in the ears, which was very hard, and could not all be removed at one syringing.

20th.—The remainder of the wax was removed, and the quinine discontinued.

27th.—Still complains of pain in the head, and great tenderness at the seat of injury; external wound not closed; quite an amount of white pus is being discharged; appearances indicate bare bone at the bottom of the wound. She has not slept well for two nights. ℞. Sol. morph. (U. S.), ʒj, at bedtime, to be repeated in two hours if necessary.

29th.—Headache continues; there is a good deal of discharge from the wound; bowels have not been moved since 27th. ℞. Hydrg. chlor. mitis, grs. x, at 4 P. M., magnesia sulph., ʒiv, at bedtime.

30th.—Bowels have been freely evacuated, and the head trouble is very much relieved.

October 7th.—External wound very much better, less discharge, and much less tenderness; the pain in the head and ringing in the ears have ceased.

12th.—Wound looking very well, healing, discharge and soreness diminished, but, on stooping over or lying on the left side, she complains of a sensation of pressure at the seat of the wound.

19th.—Continues to improve, wound nearly closed, the bone appears to be entirely healed; feels dizzy on stooping.

30th.—External wound completely healed; some tenderness still remains; all the unpleasant symptoms are very much diminished, but not entirely removed.

November 1st.—She was permitted to leave the hospital, apparently almost well; she is still troubled with dizziness, particularly on stooping. This patient was heard from the last of December perfectly well, all her unpleasant symptoms having disappeared.

This case has been related in considerable detail, but not without reason, for such cases, though by no means rare, are never without interest and instruction to practical men. The complete recovery from such a severe injury, and the persistence of certain unpleasant symptoms of brain-disturbance for two or three months, are important points, full both of encouragement and warning.

In a place where there are so many factories as in Yonkers, there are sure to be some accidents from machinery, although, considering the circumstances, we enjoy a remarkable immunity; we have only three such cases to report for the year, as follows:

CASE VIII.—William Styles, aged sixteen years, born in the United States, admitted November 4th. While at work tending a hat-pressing machine, he got his left forearm caught in the machine, crushing the flesh and bones almost to a pulp, from a little way above the wrist nearly up to the elbow, the hand escaping. We found out afterward that, in addition to the pressure of several hundred pounds, the machine was also hot enough to produce destruction of the tissues by burning.

He was etherized, and amputation was performed just below the elbow-joint, saving, as we supposed, abundance of healthy skin to cover the stump. No considerable reaction followed, and he seemed to be doing very well for a time, but in about two weeks all the skin upon which we had relied for the formation of flaps sloughed away, leaving the whole stump a granulating surface; this looked healthy, but, for some reason beyond our power to explain, failed to cicatrize. On two different occasions small grafts of skin to the number of three or four, were inserted, but, although they were deeply grooved into the granulations, the profuse discharge washed them away, and they proved wholly ineffectual. During this time he had been confined to the house, but his health seemed perfectly good, his appetite was good and his spirits cheerful; every thing was all right except the stump, and that would not heal, though we tried several plans to induce it to do so, such as strapping, extension of the integument, according to the plan of Dr. Weir, etc., and administered appropriate tonics in the shape of iron and quinine. At last I determined to try the effect of out-door exercise, and, although the weather was both cold and stormy, he was ordered to spend as much of his time in the open air as possible, regardless of weather.

He was to go out immediately after the morning visit, at nine o'clock, and, unless obliged to return by cold or fatigue, stay out till dinner at one o'clock, after dinner to go out and stay till six o'clock, thus getting every available hour of out-door exercise. This plan, which was commenced December 8th, the patient faithfully, and I may indeed say courageously, carried out, and he was not without his reward, for the sore, which had remained obstinately stationary for weeks, began at once and astonishingly to heal, and ere long he was discharged.

This was a memorable case to me, and taught me a valuable practical lesson, and taught it too in a way in which such lessons are best learned. It may not always be advisable to carry the treatment to the extent here practised, perhaps never, but are we not all of us too apt to overlook, in our zeal for treatment, these remedies which our forefathers paradoxically called the non-naturals? The next case, which occurred while the present one was under treatment, will further elucidate the same important principle, though not so strikingly, but, occurring simultaneously with the one just narrated, and being benefited by the same means, it served to fix the thing in my own mind.

CASE IX.—Michael Daley, aged ten years, native of the United States, admitted December 17th. His right hand was caught in the cogs of some machinery at the Eagle Pencil Factory, where he was employed. The little, ring, and middle fingers were all injured. In the first two the bones were comminuted, and the integuments torn to pieces; the middle finger was injured at the metacarpo-phalangeal articulation, where there was a lacerated wound penetrating into the joint. The two external fingers were so badly torn as to preclude any idea of saving them—they were accordingly removed; and, as the integuments on the back of the hand were badly lacerated, and also to improve the shape of it, their metacarpal bones were excised, the lacerated portions of skin trimmed away, and a flap turned up from the outer portion of the palm, and loosely held in place by interrupted sutures.

He was a pale, feeble, sickly-looking child, of intensely nervous temperament, and for a time the processes of repair went on very slowly, indeed seemed almost at a stand-still, but, by literally driving him out into the open air, and giving him iron and the best of nourishment, he began slowly to improve, and made a recovery which may, under the circumstances, be justly called admirable. The forefinger moves freely, and opposes the thumb accurately; and even the middle finger, notwithstanding its joint was opened by a lacerated wound, has considerable motion, which will doubtless increase.

In no cases is there greater inducement for the exercise of all that is conservative in surgery than in those of injury to the hand. Every part and every joint of this most wonderful piece of mechanism is of priceless value, and the most imperfect hand is better than none. Above all things, the thumb, even if it have nothing to which to oppose itself but the stump of the carpus or metacarpus, is of prime value, and, if we can save a finger or even part of a finger for this purpose, we have something far superior to any substitute of mechanical art, for artificial hands are at the best a miserable failure. I have known many patients who, after procuring them at considerable expense, have laid them aside rather than be burdened with such a useless incumbrance. In fact, I am not sure but Captain Cuttle's hook is as good as the best of them. And here in the hand too, as in the face, where the preservation of parts is of most importance, Nature seems to be most solicitous to assist the surgeon in his efforts at conservation. It is really wonderful, or would be were it not so familiar a fact, what Nature will do, and how in time in the worst injuries she will reward the surgeon who would rather spare than pare.

The next case was a trifling one in itself, but was complicated by that most mysterious and annoying condition called the hæmorrhagic diathesis.

CASE X.—Patrick O'Keefe, aged eleven years, native of the United States, admitted April 22d. He met with a machinery accident necessitating the amputation of the right forefinger. No difficulty was experienced in arresting the bleeding at the time of operation, nor was it unusual in amount, but next day hæmorrhage came on which could not be stopped for several hours; it was not *per saltum*, but a rapid, continuous oozing. It was finally arrested by persulphate of iron. He ran away from the hospital, and while at home nearly lost his life from repeated bleedings; he, however, finally recovered in a miserably weak and run-down condition. We learned afterward that he had always exhibited this hæmorrhagic tendency, bleeding severely from the slightest wound, and frequently having nose-bleed so severe that his parents thought it would never stop. I regret very much that we did not make use of oil of turpentine in this case, as, from the strong and clear testimony of Billroth and others, as well as some slight experience of my own, I believe it will be found the most efficacious remedy in such cases. At any rate the usual iron-treatment was miserably inefficient, so much so that it is very uncertain whether it had any influence, or whether the bleeding would not have ceased as soon without it. I would apply the turpentine locally, and give it internally in small doses as well.

We received only two cases of frost-bite or injury from exposure to cold, one of which was very severe.

CASE XI.—James Devlin, aged forty years, native of Ireland, admitted December 27th. During the severe weather then prevailing, he had been constantly exposed to the cold, and most of the time intoxicated. One night, when the weather was very severe, he slept in a cold hall-way with his boots on, which had been wet with snow-water all day. The consequence was that both his feet were badly frozen, particularly the right; on this foot all the toes were a dark-bluish purple, cold as ice and insensible; on the left only the great-toe appeared to be badly frozen. His feet were put in ice-cold water, which after a few minutes was changed for water a little warmer, and so on for an hour or more; he was then put to bed, and lead-and-opium wash applied, which was continued for a week, when, on account of the smell, a solution of carbolic acid was substituted. After waiting for the natural process of separation to proceed far enough for a distinct line of demarcation to show itself, I removed the right foot by a modified Key's amputation, sawing through the bases of the metatarsal bones instead of attempting to disarticulate them at their junction with the tarsus. This seems to be the preferable method, as the line of articulation is very irregular, and the disarticulation by no means an easy task. At the same time the great-toe of the left foot was removed, and the head of its metatarsal bone sawn off. The wound of the larger amputation was well in two weeks, and a perfect and beautiful stump left, but the progress of affairs in the other foot was less favorable. The second toe, which we hoped to save, sloughed and had to be amputated, and the metatarsal bone of the great-toe which was left became carious and had to be removed. Subsequently the next toe, the metatarsal bone of the second toe, and the internal cuneiform bone, took on diseased action and were removed, so that the patient was many months in the hospital, there seeming to be an almost inveterate tendency to the spread of inflammation in this foot.

We had eight fractures under treatment during the year, two of the thigh, two of the leg (one compound), one multiple fracture, the patella and both radii being broken, and one each of the following, viz., rib, nose, and humerus. One of the fractures of the thighs was fatal, being unusually severe and accompanied with other injuries.

Case XII.—A Pole, laborer on railroad, about forty years of age, was admitted February 17th. While working under an embankment a large amount of frozen earth suddenly caved in and crushed him beneath its ponderous weight. When first removed, and for some time after, he was thought to be dead, but subsequently revived, and was brought to the hospital about four hours afterward. Upon examination, there was found fracture of the right thigh, with great displacement, also a contusion on the right side of the second lumbar vertebra, with a few scratches and bruises about the head. He was in a condition of partial collapse.

He was placed in bed, Buck's extension apparatus applied to the injured limb, and brandy-and-water administered.

18*th*.—Patient lies perfectly quiet, with a listless, weak expression, but free from somnolence or coma; pulse very weak. He has made no complaint of any kind since his admission, and, owing to the fact that he can speak nothing but Polish, we are unable to hold any communication with him. Brandy continued, with the addition of beef-tea.

19*th*.—Patient's condition unchanged, except that he is passing into a somnolent or semi-comatose condition. Urine obliged to be drawn off with the catheter; had some hiccough in the afternoon.

20*th*.—Patient grew gradually weaker, with hiccough at intervals till noon, when he died; did not become quite comatose.

Post mortem.—Twenty hours after death, *rigor mortis* well marked, brain healthy, lungs congested, heart normal, spleen large and congested, liver congested; the right kidney was surrounded by a considerable quantity of blood, and some clots which adhered firmly to its capsule; the kidney itself was not ruptured, and the precise source of the hæmorrhage could not be made out. At the middle of the right femur was an extremely oblique fracture, so much so that the bone was split both upward and downward to the extent of over three inches.

Our allowance of fractures of the leg this year has been remarkably small. The first year we had four, the second year eight, and this year only two; one of these was a compound fracture of great severity, which terminated in amputation. The following is the case:

CASE XIII.—George Russel, aged sixty-nine, native of the United States, admitted December 1st. While intoxicated he fell down a cellar area-way, and sustained a compound fracture of the left fibula, with complete dislocation of the tibia as well, the latter bone being almost thrust through the skin. The fracture and dislocation were reduced and the limb put up in a plaster-of-Paris bandage. In a few days he was attacked with delirium tremens, and, in spite of all possible restraint, moved the injured limb about with frantic violence, Very great swelling set in both above and below the bandage, which was therefore removed. The whole leg was found swollen and œdematous, while about the ankle the skin was red and shining, as though about to give way in several places. The limb was put up in a fracture-box, and our main effort directed to his general condition. Though quieted for a time, he again became very unruly, and one night, during the momentary absence of his attendant, he actually got up and ran about the ward. By this unfortunate action he thrust the articular extremity of the tibia completely through the skin, reproducing the dislocation and widely separating the fractured fragments of the fibula. Soon after, violent and unhealthy inflammation appeared, with extensive suppuration and sloughing. The discharge was acrimonious and fearfully offensive. Two or three additional openings made their appearance, from which protruded shreds of necrotic ligament and cellular tissue. His general health of course suffered severely: his pulse was rapid and weak, he had daily fever, his tongue was dry and brown, appetite entirely gone; he was constantly delirious and trying to get out of bed, and sleep could scarcely be procured by any exhibition of anodynes. Under these circumstances two consultations were held at different times to determine the question of amputation, but so great were the fears entertained that he would sink under the operation, that both times it was deferred.

Finally the leg was amputated about the middle by the long posterior-flap method, and, after sawing through the bone, the upper sharp edge of the tibia was bevelled off by a slanting saw-cut, a useful precaution against the ill consequences that may arise from pressure against the edge of the bone by the superjacent tissues, which are very thin and frequently ulcerate through from this cause. Owing to the inflammatory processes that had been going on about the ankle, a good deal of blood was lost during the operation, and at its conclusion the patient was in a very low and precarious condition. However, he soon rallied very nicely, and for about a week every thing seemed to be going on well; he then began to be feverish, and again delirious, so much so that we were obliged to strap him down to the bed. At the same time the discharge from the stump began to be very offensive, exactly resembling in odor that which had come from the injured parts previous to amputation. All dressings and sutures were removed, and the stump, the interior of which was found in a sloughing condition, left completely open, and carbolic acid freely applied. Though for a long while his death seemed imminent, and was daily expected, after a time things began to improve, and the sloughs, mainly of connective tissue, with some muscle and tendinous shreds, separated, and healthy granulations sprang up underneath. During all this time the process of sloughing or sphacelation did not in the least involve the integument. When the process of cleansing or separation was complete, it was thought advisable to bring the flap up again over the wound, particularly as the upper flap was beginning to pucker in and unite with the parts beneath. Upon attempting to do this, it was found that the lower flap, which had been made long, perhaps unnecessarily so, was so infiltrated and thickened as to be stiff and unyielding, and could scarcely be turned over so as to cover the face of the stump. It was brought over as well as possible, and secured with three deep silver-wire sutures. These after a few days cut out, although assisted by long, firm strips of adhesive plaster. I then took two large acupressure pins, and, passing them very deeply through corresponding points of the upper and lower flaps, brought the surfaces firmly together by twisting stout yarn over them. This plan, which was aptly denominated by the hospital nurse skewering, answered very well, and from this time the stump healed up steadily though slowly.

It is almost unnecessary to say that all this time appropriate treatment, consisting of tonics, anodynes, and regulated nourishment, was addressed to the patient's constitution.

After a residence of many months in the hospital, having been much of the time in a very precarious condition, and twice on the very verge of death, he was discharged not only well, but in better health than he had been before the accident. The following case of multiple fracture deserves a passing notice:

Case XIV.—Frederick Wiedeman, aged thirty-eight, native of Norway, admitted November 23d. He was a painter by occupation, and, while standing on a ladder painting a house, the ladder gave way, and he was precipitated to the ground, and brought immediately to the hospital. He was found to have sustained the following injuries, viz.: a slight cut under the chin, a fracture of the radius of each arm near the wrist, and a compound fracture of the left patella, this latter, which is very unusual, being vertical instead of transverse in direction.

The little wound of the chin was closed with a single point of suture, the arms put up in short, straight splints, and the leg in a plaster-of-Paris bandage, leaving the knee exposed. A more helpless sight than this poor fellow with both arms and one leg immovable, and able to speak scarcely a word of English, could hardly be imagined, but he made a prompt and excellent recovery in a month; the splints were taken off his arms, and he began to move about. As a proof of his good recovery, we may mention that before he left the hospital he painted and grained almost the whole inside of the house, and painted a sign for the dispensary.

There were two gunshot-wounds treated in the hospital during the year, both of considerable interest.

Case XV.—Patrick Goggins, aged fifty, native of Ireland, unmarried. General appearance healthy, strong, and muscular; mind below the average, indeed, almost if not quite imbecile. He was brought to the hospital 8.25 p. m., September 14th, by the police. He was said to have resisted and attacked a police-officer who had an order for his arrest, and who in self-defence drew his revolver and fired three shots at him. The revolver was a small pocket weapon without a barrel, the bullets, which were not larger than buckshot, being fired direct from the chambers. Examination discovered three small pistol-bullet wounds, one on the posterior surface of the left arm over the radius, three and a half inches above the wrist-joint; direction of the wound, upward and inward. The ball lodging deeply among the muscles of the forearm, could not be found by any reasonable amount of probing. There were two wounds on the anterior part of the thorax. The first over the sternum, a little to the right of the median line, and opposite the interval between the third and fourth ribs. This wound was not a penetrating one, it was very shallow, and seemed as though the little ball had made but a feeble impact and then dropped out, or had been pulled out by the clothing.

The second wound of the thorax was two and a quarter inches lower than the first, and half an inch to the right of the sternum, and penetrated the thoracic cavity, producing apparently considerable hæmorrhage into the pleura. There was a marked bulging out of the ribs on the right side as high as the level of this wound, with dulness on percussion below the wound and resonance above. There was no cough or expectoration of blood, though he said he spat up some blood before his arrival at the hospital. He says he has not much pain, but complains of a feeling of suffocation. I passed a probe directly into the wound about three inches, but, as a slight exploration did not succeed in finding the ball, I desisted, not thinking it best to probe any farther. There was some bleeding externally from the wound, but nothing of any account.

15*th*, 7 A. M.—Pulse 100, and regular, respiration 48, not as much dyspnœa as last night, slept some during the night.

8 P. M.—Pulse 88, respiration 40, temperature 100°, says he feels much better, has slept at intervals during the day.

16*th*.—Does not appear as well to-day, pulse 100, respiration 45, temperature 99°, appetite very poor.

17*th*, A. M.—Appears very much better than yesterday, pulse 80, respiration 33, temperature 98°; took an egg and some tea for breakfast.

7 P. M.—Temperature $100\frac{7}{10}$°, pulse 85, respiration 33, considerable tenderness over the right iliac region; as his bowels have not been moved since the morning of the 14th, he was ordered two ounces of Rochelle salts.

18*th*, 7.30 A. M.—Slept very well through the night, appetite improved, tenderness over the abdomen gone, pulse 84, temperature $101\frac{1}{5}$°, respiration 34.

7 P. M.—Pulse 87, temperature 101°, respiration 37, general appearance good; bowels have been freely moved.

19*th*, 9 A. M.—Pulse 80, temperature $99\frac{1}{2}$, respiration 30.

20*th*, A. M.—Pulse 75, temperature $98\frac{3}{5}$, respiration 24.

P. M.—Pulse 80, temperature 100$\frac{2}{5}$, respiration 26; complains of some pain in the right side.

27th.—Has continued about the same; iodine has been painted upon the right side twice a day for the last five days; the dulness has diminished slightly. There is no pain in the side, and no cough.

October 8th.—He was removed by the police for trial, after which he returned to the place where he was living before his arrest. A few days after his removal from the hospital, he began to cough and expectorate very profusely; the sputa was said to be dark-colored and very fetid. He was readmitted to the hospital on the 29th of October.

Physical examination revealed dulness over the lower lobe of the right lung, with very extensive coarse mucous *râles*. No pneumo-thorax discovered; coughs and expectorates large quantities of purulent matter of a brown color, and most abominably, almost insupportably offensive, with an odor resembling that of gangrene of the lung.

He cannot lie on either side, feels best when sitting up; he has emaciated rapidly, appetite almost entirely gone. ℞. Quiniæ sul., grs. v, ac. carbolic., gr. j, four times a day; whiskey and milk-punch *ad libitum;* diet, any thing he will take.

November 7th.—Since November 3d he has not coughed or raised as much as before; both cough and expectoration are decreasing from day to day. Appetite very much improved; sits up most of the time, and is very much stronger.

11th.—Dulness continues, and only very limited and feeble respiratory murmur can be heard over the lower lobe of the right lung. Appetite continues excellent, and he continues to gain strength; weight one hundred and forty-two pounds.

18th.—Has had some cough and expectoration this week, sputa much less fetid; he does not seem as well, appetite not so good, and he has lost flesh slightly this week; weight one hundred and thirty-nine pounds. The quinine and carbolic acid were discontinued, as they produced headache and dizziness.

This drawback soon passed over, and he began again to improve, and continued to do so steadily, increasing in weight and strength until January 28, 1873, when he was discharged well.

Perhaps it is not impossible that the bullet, which undoubtedly remained in this man's lung, might have laid quiescent, and never have given rise to the trouble which subsequently broke out, but for his premature exposure and attempt to work.

As it was, the final result, after the formation of a gangrenous abscess in the lung, and many weeks of exhaustive and fetid suppuration, was extraordinarily fortunate.

No doubt the ball finally became encysted and innocuous, and the lung around it permanently solidified. We cannot be sure that the administration of carbolic acid shortened or diminished the suppuration, but one thing is certain, it materially lessened the offensive odor, and for this purpose, at least, is to be recommended in similar cases.

Case XVI.—Charles Hampsen, aged seventeen years, native of the United States, admitted October 17th, about noon. At ten o'clock, A. M., while out in the woods playing with a small pocket-pistol, it was accidentally discharged, and the ball, a very small one, entered his abdomen on the left side of the median line about three inches above Poupart's ligament, and an inch and a half internal to the superior spinous process of the ileum. The symptoms on admission, although he had walked over a mile after receiving the injury, were not very serious; pulse 80, surface cool, some pain in the wound and its immediate neighborhood; a probe showed that the wound did not burrow under the muscles, but entered at nearly a right angle, probably penetrating the abdominal cavity; no further examination of this kind was deemed advisable.

6 P. M.—Pulse more frequent, 100 in the minute, temperature 100°; had vomited and complained of severe pain in the abdomen. Ordered morph. sul., gr. $\frac{1}{4}$, every hour till the pain should be subdued, and sleep induced.

18*th*.—Pain and vomiting continue, pulse 100, temperature, morning, 100°, evening, 100$\frac{3}{4}$°. Continue morphine, with hot applications to the abdomen.

19*th*.—Pulse 112, temperature 102°; pain and tenderness less, has not vomited since yesterday, takes no nourishment, slept well last night. To have his morphine every two hours instead of every hour; the large amount of morphine he has taken does not seem to have narcotized him in the least.

20th.—He has slight diarrhœa, but complains less of pain and tenderness; pulse and temperature the same.

From this time all his symptoms rapidly subsided, he began to eat well, and expressed a wish to get up, which was denied him for some time, and at first allowed only for a little while each day; but he continued to do well, and was discharged completely recovered, November 2d.

Some years ago I attended a little boy who, while playing with a pistol, shot himself in the abdomen, and several feet of intestine protruded, and were covered with dirt and powder. They were cleansed, and, after enlarging the external wound, which was found necessary, returned to the abdominal cavity. Under ordinary treatment he quickly and completely recovered. Unless some of the viscera or important blood-vessels be injured, wounds of the abdominal cavity do not seem to be of fatal import even when very severe. I knew a woman who was gored in the abdomen by an infuriated cow, and the abdominal parietes ripped open to the extent of several inches, presenting a most horrible and alarming wound, yet she recovered speedily under the simplest treatment.

The next case I shall relate is one of abscess of the femur.

Case XVII.—Andrew Jackson, aged eight years, native of the United States, admitted March 21st. His father is dead; his mother, who is living, is a healthy woman. He has always been well until a little more than a year ago, when a playmate pushed him violently against a stone and hurt his left leg just above and to the outer side of the knee. His knee and the limb above it at once swelled and became very painful, and, in spite of a variety of treatment, continued in about the same condition until six months ago, when an opening occurred which has been discharging ever since.

The boy's general health is remarkably good, considering the pain and confinement he has undergone.

Upon the outer side and about the middle of the lower third of the left thigh, there is a fistulous opening leading down to the bone, and apparently communicating with an opening in the bone itself; at present there is no swelling of the part, and the discharge, though constant, is slight, of a thin, somewhat oily consistence, and without odor.

April 10th.—A free incision was made through the sinus down to the bone, in which was found a small circular opening, with sharp, well-defined edges, leading to a cavity of considerable size in the bone. This opening was enlarged, and disclosed an abscess in the bone as large at least as the section of a pigeon's-egg, lined with a well-formed pyogenic membrane; this was scooped out clean and smooth with a gouge, and loosely stuffed with lint, as was also the external wound.

24th.—His leg has rapidly improved, being nearly healed; there is no discharge.

26th.—He was discharged from the hospital to-day well, and I have repeatedly seen him since running and jumping with as much activity as the wildest of his comrades.

The following case is interesting, and, I believe, somewhat uncommon, at least in this country.

CASE XVIII.—Delia Horan, aged twenty-eight, native of Ireland, admitted May 27th. She has had an enlargement of the left lower extremity for about thirteen years; it began after a fever, probably typhus, from which she suffered in the old country. Although it has on the whole steadily increased in size, its progress has been fluctuating, being apparently stationary at times, and rapidly increasing at others.

There is no pain in the limb when quiet, but after standing or walking it is painful, with a disagreeable and burdensome sensation of weight. She once had an attack of superficial inflammation in it, which, from her description, seems to have resembled erysipelas. The enlargement is most marked just above the ankle, where it begins, but the whole extremity, quite up to the hip, is very much increased in size. The skin is of a natural color, if any thing, rather paler than the other limb; it does not pit on pressure, but has a hard, brawny, resistant feel; the enlargement ceases abruptly at the ankle. Measurements: circumference two inches above the ankle, right leg, 9½ inches, left leg, 15 inches; midway between the knee and ankle, right, 13 inches, left, 16 inches; at the knee, right, 15 inches, left, 15½ inches; middle of thigh, right 18½ inches, left, 19½ inches.

June 5th.—Has been treated by rest in the recumbent posture, and a firm, evenly-applied flannel bandage, which has reduced the enlargement somewhat, and she says makes it feel much more comfortable.

7th.—Ordered an ointment of pot. iodide, one drachm, adeps, one ounce, to be well rubbed into the leg once a day, and bandage applied as before.

July 1st.—Ordered ℞. Hydrg. bichlorid., grs. ij, tinct. cinchon., ℥iv, a teaspoonful three times a day, and ung. hydrg. to be rubbed into the leg instead of the ointment previously ordered; this course to be pursued till slight ptyalism is induced; bandage as before.

8th.—Circumference of left leg two inches above the ankle, 10¼ inches, a decrease of 4¾ inches; midway between knee and ankle, 13½ inches, a decrease of 2½ inches; the knee and thigh seem to be scarcely larger than the other side.

13th.—Being tired of the confinement and impatient to go out, she was discharged, not cured, but very much relieved. As she has not been seen since, we do not know whether the improvement has been permanent or not. It may be fairly questioned whether the medication, either external or internal, did any good in this case, or whether the amelioration which took place was not simply due to the rest and bandaging. The affection seems to have been chronic inflammation and obstruction of the lymphatics, with possibly some implication of the veins. This peculiar sequela of continued fever is mentioned by Graves, Stokes, Tweedie, Murchison, and some of the earlier British writers; in particular I would refer to an excellent paper on the subject in the *Edinburgh Medical Journal* for September, 1872, by Dr. J. Warburton Begbie, entitled "The Swelled Leg of Fevers."

I append to this report the description of a rachitic dwarf who died in the hospital. Although his case did not come under my department, still the notes of his deformity may not be without interest:

Alfred Thomas was born in England, and at the time of his admission to the hospital was fifty-two years of age. He says that he has no relative similarly deformed. His deformity consists principally in the disproportionately small size of his limbs and the large size of his head. He has always until lately enjoyed good health, though in infancy his head was so

large as to lead a practitioner to declare that he had chronic hydrocephalus; but, as there were no other symptoms, and this diagnosis was contradicted by others better qualified to judge, it was probably a mistake. His height is 4 feet 3½ inches, the length of the body constituting the most of it. The following additional measurements were taken: from the olecranon to the styloid process of the ulna, 7½ inches; from olecranon to acromion, 8½ inches; around the chest at nipple, 30 inches; circumference of head, 24 inches; from ear to ear across the vertex, 15½ inches; from root of nose to occiput, 16 inches; from anterior superior spine of ileum to upper border of patella, 12½ inches; from upper border of patella to internal malleolus, 10 inches.

His forearms and legs below the knee are very much curved, and the epiphyses enlarged; all his joints are unusually and unnaturally loose and flexible.

He is not deficient in intelligence, but has been for some time a confirmed sot, and is exceedingly morose and disagreeable in his disposition.

A few months after these notes were taken, he died of some obscure brain-disease; no *post mortem* was allowed.

II.—*Ligation of the Left Subclavian Artery for Secondary Hæmorrhage following Amputation at the Shoulder-Joint. Recovery.* By W. Burt, M. B., Paris, Ontario.

J. R., aged thirty-five years, single, born in England, and a machinist, was intoxicated on the evening of the 18th of June, and about to spend the night in company with two other inebriates in a cattle-guard on the Grand Trunk Railway, within a few yards of the station-house at this place. He was lying with his arms across one of the rails, when a train passed, the engine running over them, almost detaching the right forearm in its middle third, and severely mutilating the left, the upper third of the humerus being much comminuted and protruding, and the tissues around severely mangled. Dr. Clarke was near by at the time, and had the man removed at once to an hotel, and sent for assistance. On the arrival of

Dr. Cooke and myself, the patient was anæsthetized with ether, when Dr. Clarke amputated the arms, the right one in the middle third of the forearm, the left at the shoulder-joint. The man's condition during the latter part of the operation was very low; brandy was freely given, but it was with difficulty he could be made to swallow it. Very little ether was required. For several hours after the operation he was apparently moribund. The conjunctivæ were almost insensible to the touch. I never have seen a man so near dying, and did not die, as this one. But by the persistent use of stimulants, artificial heat, and concentrated nourishment, he slowly rallied until the fourth day, when an attack of delirium tremens came on, which, by the timely use of chloral, was not allowed to do any injury to the stumps. He states that he has had delirium tremens twice previous to this accident. From this time he did well under the use of opiates as required, quinine, suitable nourishment, etc., until June 30th, when profuse hæmorrhage came on from a branch artery at the shoulder, causing him to faint. The ligatures were then all tried and easily removed, with the exception of one which had been thrown around some small vessels, including some muscle, which was left. The axillary appeared to have a firm clot. Both stumps had healed kindly, and the flaps were quite strongly adherent. On the night of July 3d bled slightly again, and on the morning of the 4th bled similarly to the first hæmorrhage, but not quite so profusely. The patient had now become greatly blanched and alarmed, and begged that something might be done to keep it from "breaking out." As the plug was still firm in the axillary artery, and the flaps pretty firmly united, with the exception of the inner portion around the axillary vessel, where was a deep slough, but limited, we decided to clean the wound and apply persulphate of iron (Monsel's solution), afterward filling the wound with lint soaked in a solution of the iron. No return of the hæmorrhage until the 6th, when we were summoned in great haste, and on examination found the main artery had given way, and, as the man and nurse described it, it had spurted in a stream as large as the little finger over the bedclothes; but, as the nurse was present, he allowed but little blood to escape, by pressing with one hand above the clavicle, and the other with a plug (prepared in case of need) over the extremity of the vessel, in order to fully control it if possible. Drs. Clarke, Lawrence, and myself, decided at once to ligate the subclavian, as the condition of the vessel and the tissues around it was such that we could not effectually secure it at its extremity. By this means we would give the flaps a more favorable chance to heal, and our patient his only chance for recovery. He was again placed under ether, and, at the request of Dr. Clarke, I cut down upon the subclavian and ligated it. The difficulties surmounted were the stopping of the hæmorrhage with a plug, and the great depth of the artery, due to a certain extent in this case to the elevaation of the shoulder, consequent on the loss of the arm and the attachments of the muscles to it. It was also found very inconvenient to depress the shoulder. A slight modification was made in the usual operation for ligature of the third portion of the subclavian, viz., instead of making a vertical incision through the integument at right angles to the first, we simply divided the platysma and fascia beneath it, when the upper margin of the wound instantly retracted to a sufficient extent. I think this materially facilitates the closing of the wound afterward and union by "first intention." The man, though greatly bleached from the recurring hæmorrhages, rallied slowly for the first few days, and afterward rapidly improved. The wound above the clavicle healed by "first intention," except at the outer part, where exit was given the ligature. This came away on the thirty-fourth day.

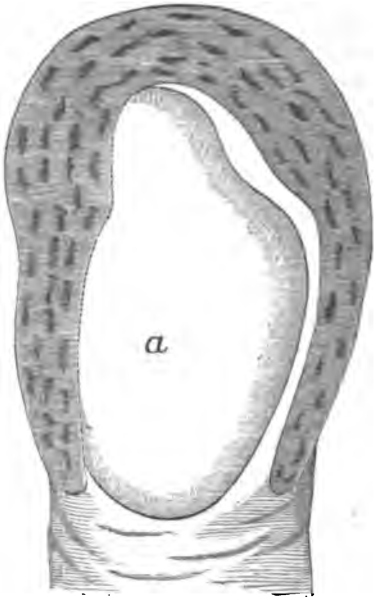
July 9th.—I know of no cause for the delay unless it was that the ligature was not drawn sufficiently tight at the time of the operation. It was still firm at the end of the fourth week, when we resorted to gentle traction and twisting by means of a small bit of wood through the extremity of the loop, and fastening it on each alternate day. It was thus readily enough removed.

16*th.*—The wound has healed, and his recovery is now considered complete. He intends sailing for England in a few days.

I think this a case to which Dr. Speir's "artery constrictor" would have been preëminently adapted, and regret that we had not one to apply. It supersedes the ligature when applied, at least in the continuity of a vessel, and, from our present knowledge of it, we would give it the preference, unless the artery was too fragile, to either the catgut or the antiseptic cut short. This instrument, which was first devised and brought into notice by Dr. Speir, visiting surgeon of the Brooklyn City Hospital, when I was house-surgeon of that institution, is not much known here in Canada. I saw it applied to the femoral artery for a large popliteal aneurism, and on several occasions to the extremities of vessels with perfect success. The "constrictor" closes the vessel by leaving the external coat intact, and invaginating the internal and middle coats, allowing a plug to form readily. The time, from the moment the instrument is applied until its removal, does not necessarily exceed half a minute. When applied in the continuity of a vessel, for example, in a case like ours, it allows the wound to heal by "first intention," or gives it a more favorable chance for healing, and the anticipated danger from secondary hæmorrhage on the removal of the ligature is gone, a great boon not only to the anxious surgeon, but to the still more anxious patient. Although we find, from the literature of the deligation of this vessel, that the danger of hæmorrhage from the proximal side of it is *nil*, still I think it would be more adapted to those where the artery is not protected by passing between but in front of the scaleni muscles. The application of this instrument, with reports of cases, was given from time to time by Dr. Speir and others, in the NEW YORK MEDICAL JOURNAL and *New York Medical Record*, in 1871 and 1872. I have not seen any reports of its application lately, although several of the instruments were sent abroad.

III.—*Case of Intra-Uterine Polypus in a Patient from whom a Large Vaginal Polypus had been removed Two Years previous.* By GEORGE HOLMES BIXBY, M. D., Boston.

IN October, 1872, I was consulted by Mrs. C., forty-six years of age, a native of Massachusetts, and a member of a family of eight. Her parents both died of old age. Menstruation first appeared at fourteen, was regular as to time, quantity, quality, and duration. She married at eighteen, and has given birth and miscarried as follows: The first birth, a year after marriage; the second, two years and seven months after the first. Both children were nursed. Two miscarriages, at the third month, occurred between the last two births. Since the last confinement, menstruation has been habitually profuse, and accompanied with large clots. She consulted Prof. D. H. Storer, in 1870, for metrorrhagia, by whom a large vaginal polypus was diagnosticated. She was advised to enter St. Elizabeth's Hospital, at which institution she was relieved of a large polypus, filling the entire vagina and attached to the neck of the uterus, Dr. H. R. Storer being the operator. She was in due time discharged from the hospital quite well. In September, 1870, she consulted Prof. Storer for a return of her former trouble. An examination upon this occasion revealed a round, regular body, protruding from the os, two inches in diameter. The patient being desirous of having the operation performed at her home, in a neighboring town, Dr. Storer kindly referred her to me. By inspection the patient is of medium stature, dark complexion, is emaciated and chlorotic. Mammæ and external genitals normal. By vaginal examination the finger came in contact with a round mass that protruded from the os uteri. Anteriorly the os was patulous, readily admitting the extremity of the finger to the extent of an inch. Posteriorly, the lip was firmly adherent to the surface of the tumor, and imparted to the finger the impression of an hypertrophied condition of the posterior lip; a well-defined indurated ring was found completely encircling the margin of the os. The sound entered anteriorly three and a half inches. With the assistance of Dr. Pinkham, of Lynn, the operation for the removal of the growth was undertaken, the diagnosis having been reserved until after an examination under an anæsthetic. When fully under the effect of ether, an attempt was made to separate the posterior lip from the surface of the tumor. By this method it was impossible to be done. The same was essayed with the extremity of a director, and with considerable difficulty the parts were separated to the extent of an inch. Resorting now to the use of the index-finger of the right hand, the left hand making counter-pressure above the pubis, I succeeded in detaching freely all the adherent portions, which were found to extend to the fundus, where a well-marked pedicle was found. Anteriorly, the adhesions were slight. While Dr. Pinkham supported the tumor, by means of tenaculum forceps, the chain of the *écraseur* was passed around the pedicle, the latter severed, and the mass removed. The hæmorrhage was insignificant; the patient bore the rather protracted manipulation quite well, and in due time made a good recovery.



Upon examination of the specimen, it was found to be pear-shaped, and to have the following dimensions: Length, 3½ inches; width, 2½ inches; thickness, 2⅛ inches. The point of attachment of the pedicle proper was less than half an inch.

Microscopic examination confirmed the diagnostic name of fibrous polypus.

IV.—*The Use of Ipecac. in Delirium Tremens.* By W. S. Schenck, M. D., Osage City, Kansas.

In the August number of the New York Medical Journal, I notice an article by Dr. Van De Warker, in which he says, in speaking of delirium tremens, "With the exception of bloodletting, we stand where we did in the days when the three-bottle men abounded," and recommends for its treatment a plan heroically expectant. This may be preferable to the other modes he enumerates. For many years I have been in the habit of giving full doses of ipecacuanha. Allow me to give a case as typical of the result:

January 2, 1865.—I was called, at 11 p. m., to see Patrick K. Found him wildly delirious, with visions of blood flowing everywhere, and a disposition to increase the quantity. He had been slaughtering hogs, and drinking more freely than usual for several days.

Gave him pulv. ipecac., grs. xx, every fifteen minutes, until two drachms had been taken. No emesis was produced, but the delirium almost wholly relieved. Finding I had administered an emetic, he said, "It's to vomic me you want, is it?—Katy, give me the salt-and-water." His wife obeyed, and he drank half a pint of warm brine. There still being no emesis, and the patient determined on a vomit, he called for a goose-quill, and thrusting the fibrous end down the œsophagus with a twist or two, soon succeeded in emptying his stomach. He slept quietly during the remainder of the night, and had but a slight return of the delirium.

I have given this man the ipecac.-treatment since for *mania a potu*, with equal success, and not long ago his wife wrote me for my prescription, complaining that other treatment did not relieve him.

We may philosophize upon the action of alcohol and the pathology of the disease, but much of our knowledge is only theoretical, and alcohol certainly cannot thus *cure* delirium tremens. Whatever its pathology, we find the let-alone treatment much more successful, as Dr. Van De Warker says, than any that lessens vital metamorphosis. The nerves but faintly perceive impressions made upon them. Vital activity is everywhere arrested. Worn-out tissues are only partially removed and replaced, and the brain, enfeebled and overloaded with effete matter, fails to control mental action, and generate sufficient nervous influence to give steadiness to muscular action. As an old friend expressed it, "the body is pickled." This condition cannot be relieved by opiates nor by "stimulants;" *similia similibus* will not answer. "The hair of the dog will not cure the bite." Possibly it may be temporarily relieved if given in sufficiently large doses, as a lesser impression may be removed by one more powerful. Thus, the partial paralysis of the gastric nerve, caused by the succession of little concussions in the motion of a boat or swing, producing "seasickness," is relieved by chloroform, or the pain of a colic, or the sense of exhaustion from over-exertion or disease, by a glass of grog, and cured, if Nature becomes accustomed to the cause, or rallies her powers before the impression passes away.

Correspondence.

THE LONDON HOSPITAL FOR DISEASES OF THE THROAT.

London, *August* 22, 1873.

This hospital is situated in Golden Square, at almost a stone's-throw from Regent Street, and about midway between Oxford Street and Piccadilly. This hospital is especially devoted to the treatment of diseases of the throat, no other class of patients being allowed entrance. The consultations take place during the afternoon of each day, and the quotidian number of patients seen averages from eighty to one hundred. In this extended list of the persons afflicted, who present themselves, may be found cases of all kinds relating to the trachea, œsophagus, pharynx, larynx, tonsils, nasal passages, and also to thyroid and glandular enlargements. Of these, the majority may be and are treated, more or less successfully, according to their several affections, in the out-door patients' department. There are, however, always a limited number of patients who are admitted into the hospital (eighteen beds). These are naturally selected from the more severe cases which attend at the hospital. Connected with this institution are a pharmacy or dispensing department, an inhaling-room, and a pathological museum.

The inhaling-room can admit twelve patients at a sitting. Around three sides of the room is placed a long piece of iron pipe attached to the wall, and connected below in the basement with a boiler which generates a regular amount of steam constantly (when in use), by the action of a powerful gas-burner in direct contact with it. At regular intervals around the tube in the upper room, are small, horizontal, almost capillary tubes, through which the steam escapes over a vertical tube of the same calibre, which stands in a cup filled with a given amount of medicated solution. In fact the arrangement for atomizing fluids is very much that of Siegle's on an extensive scale.

In the inhaling-room, the patients who attend at the hospital may take daily inhalations, if deemed advisable by the visiting medical staff. The solutions principally employed are the astringent ones, generally medicated by the metallic salts of zinc—chiefly the chloride (2–5 grs. to ℥j), and iron (3 grs. ferri perchlor. to ℥j), and the antiseptic, such as those of carbolic acid (3 grs. to ℥j), and permanganate of potash (5 grs. to ℥j).

Inhalations of volatile liquids, such as the compound tincture of benzoin, the essential oils (held in suspension mostly by the light carbonate of magnesia), conium, creosote, and iodine, are prescribed quite as frequently, and as adjuncts to the use of the mineral astringents, but these latter are ordered to be employed at home, and specified quantities (generally a teaspoonful of the mixture to a pint of water at a temperature of 130° to 150° Fahr.) are used either in Maw's inhaling apparatus, or else, by the poorer patients, in an ordinary narrow-mouthed jug. In our estimation, Dr. Mackenzie's eclectic inhaler is superior to all others. However, the price ($3.00) makes it only available to richer patients. All the inhalations are directed to be used for from five to ten minutes, with short intervals of rest.

The pathological museum already contains some very interesting specimens. Among these is a case of complete eversion of the ventricle of the larynx on the left side, and partial on the right. We believe there is only one similar specimen in any other of the London hospitals. We may also mention a very interesting preparation, showing the value of the laryngoscope during life. It is one where complete paralysis of the left vocal cord was diagnosed, the structure of the cord being perfectly normal, and it was given as an opinion that there was pressure on the recurrent laryngeal nerve of that side, probably by a thoracic tumor, causing loss of motor power in the abductor muscle. There were, however, no auscultatory signs of the presence of this tumor, and it was only some time after, a few weeks previous to death, that the presence of a carcinomatous growth could be positively affirmed, seated under the upper part of the sternum. In the specimen the left recurrent nerve is seen running through the cancerous mass, with the muscular fibres of the left crico-arytenoideus posticus entirely absent, fibrous tissue being all that remains. The companion muscle is evidently well nourished.

Besides these, we find numerous deviations of the trachea, where the displacement has been caused either by malignant tumors, bronchoceles, or lymphadenomata. Of the latter there are two that reach extraordinary dimensions.

Growths in the larynx are remarkable by their absence, there being only one of a young child and another of a dog.

The history in the latter case is very amusing. The neoplasm had not been diagnosed during life, but the difficulty of respiration was said by a veterinary surgeon to be due to complete destruction of one lung, with considerable mischief in the other. Strychnia was recommended. The autopsy discovered no disease in the lungs, but that the larynx was filled by a papillary growth.

As yet there is no published catalogue of what the hospital possesses in this line. We understand, however, that ere long one embracing the history of all the bottled-up treasures will be published.

Like many of the hospitals of London, the Throat Hospital possesses a very complete pharmacopœia, in which may be found formulæ for all the inhalations of vapors and nebulized fluids, for the gargles, lozenges, mixtures, and the collyria (the latter term is given to applications made with the laryngeal brush).

One of the interesting novelties in the way of treatment (first suggested by Lücke, of Berne) is that used in bronchoceles of a hard and fibrous nature, by its injection with the compound tincture of iodine of the British Pharmacopœia.

These injections, now employed in all similar cases, for nearly a year, are made on an average, at the beginning of the treatment, once a week.

At a later period, and when the tumor has notably diminished in volume, the injections are employed less frequently. The quantity of the liquid used on each occasion is thirty minims. This is injected directly into the tissue of the gland. A syringe, very similar to the one familiarly known as that of Pravaz, is adopted. Great care is to be exercised in washing it out, immediately after the operation, with rectified spirits, in order to palliate the hurtful action of the iodine on the joints of the syringe. During a brief period after the injection, some few patients complain of severe pain or smarting in the goitre and its immediate neighborhood, but this is of a very temporary nature. Swelling of the tumor takes place very shortly after the injection. In twelve or fourteen hours diminution begins, however, and the tumor gradually lessens in density and bulk. At the expiration of a few weeks to a few months, but a small portion of the original formidable tumefaction remains. While speaking of the results of this method of treatment, we can safely affirm that, of the divers treatments we have seen employed in this form of bronchocele, it shows itself the most successful. Certainly it is far superior to the use of iodine externally, or iodide of potash internally, and without the great risks intercurrent and following the ablation of the tumor.

The softer and, as it were, more generalized form of bronchocele is treated successfully by ordinary counter-irritation with the liquor epispasticus of the British Pharmacopœia.

The cystic form of bronchocele is treated after the method first recommended by Dr. Morell Mackenzie, by tapping the cyst and drawing off the serous, or, as is more frequently the case, thick, coffee-colored liquid (due to a certain amount of blood contained in the cyst, which has exuded from the internal surface of the walls), and then by the injection of one or more drachms of a solution of perchloride of iron (120 grs. to an ounce of water).

The object of the injection of iron is to coagulate the blood which immediately follows the escape of the cystic fluid. This coagulated blood after a few days becomes purulent, and the cyst is converted into a chronic abscess.

Sometimes more than one injection of the solution is necessary previous to the encysted liquid becoming purulent.

The duration of this treatment, like that of bronchocele of a fibrous nature, is of course variable, depending upon the size of the cyst. Its success, however, appears certain, and we can bear witness to having seen many admirable cures result from its adoption.

During our attendance at the hospital, a case has occurred in which the bronchocele had reached an enormous size—the patient's chin being pushed up by it to the farthest extent. In the treatment of this, after the cyst had been destroyed by the plan mentioned above, it was found necessary to use the injection of iodine into the walls, as they in themselves formed a considerable tumor. The result was a complete cure. We did not see the patient until treatment had been for some time carried on, but a photograph of the neck, taken before any operative measures were begun, showed the immense size of the enlargement.

With regard to enlarged tonsils, we have remarked that excision is almost the exclusive treatment. The tonsillotome is of simple construction, without the fork we have often seen them made with; and the operation is materially facilitated by external pressure, made by an assistant below and behind the angle of the jaw. When the flow of blood becomes a source of anxiety, the hæmorrhage may be immediately arrested by the patient swallowing small quantities, at short intervals, of a saturated solution of tannin in water.

In comparatively acute cases, we have seen the ablation of the tonsils lead to very excellent results. In more chronic ones, especially in children, persistent attacks of nightmare may often be stopped, and the general nutrition very much improved, by the same operation. In a late article of the

British Medical Journal, we find the use of Mr. Thomas Smith's (of St. Bartholomew's Hospital) admirable gag, for cases of cleft palate, strongly advocated when the child is unruly. The gag does not at all interfere with the successful performance of the operation.

When the little patient is exceedingly difficult to manage (after the authority cited), recourse may be had with advanto an anæsthetic.

Every one knows, nowadays, how very dexterous Dr. Morell Mackenzie is in all manipulations carried on within the larynx. With regard to growths, it will be interesting to know what are the principal instruments employed by him at his clinic, in the evulsion or excision of these troublesome and frequently dangerous productions.

The tube-forceps is now much less employed by him than in the earlier period of his demonstrations. The common laryngeal forceps and the cutting forceps amply supply its place in the great majority of cases. The common forceps is made in two ways; some open in from side to side, others in the antero-posterior direction. It terminates in hollow, spoon-shaped extremities, serrated along the edges. One form of the cutting instrument consists of the ordinary forceps, but the margins of the spoon-shaped extremities have very sharp edges. In another (more rarely employed) the cutting edge of one blade closes against a flat disk of lead, which is contained in the opposite blade. Both the common and the cutting forceps have the same curve. Instead of being curved like a catheter, as we find in most laryngeal forceps, the blades are at a right angle with the handle, and the angle itself is less rounded off than is usual. This form of forceps is well adapted to the larynx, as it allows of its introduction without contact with the epiglottis. Dr. Mackenzie has exclusively employed in our presence one or other of the above-described instruments. In fact, he allows it to be understood that, with these latter, a skilled operator may accomplish successfully the evulsion, crushing, or excision, of by far the larger proportion of growths in the larynx. The antero-posterior forceps is more suitable for tearing away growths situated upon the vocal cords, and the lateral is better adapted to operations on those at the anterior or posterior commissure.

In cases of functional aphonia, we can testify to the astonishing effect of the electric current. In patients who have been completely aphonic for a number of years, we have seen the voice almost magically restored in a single sitting. Several operations of tracheotomy have been performed in the hospital during the last few months. Generally speaking, the patients operated on were suffering from stenosis, or œdema of the larynx, of a chronic nature, due either to chronic laryngitis, or to tertiary syphilis, and occasionally to phthisis. Thus far all the operations have proved successful, and we have no deaths to record.

In this connection we think it proper to mention a most admirable arrangement for the introduction of the canula during the operation. Within the outer tube, instead of the usual inner tube, is contained a solid metallic guide, made up of many sections riveted together, so as to be able to adapt itself to the curve of the tube. This guide fills up the calibre of the outer tube, and is terminated at one end by a somewhat pointed elliptical extremity, which allows of its being easily introduced by the wound of the trachea, and at the other by an ivory handle of sufficient length to be grasped by the operator. By the use of the above instrument, no dilator is required to separate the lips of the wound in the trachea, and, at this generally difficult period, the operation is singularly facilitated. So soon as the outer tube is recognized to be within the trachea, the guide is withdrawn, and the inner tube is immediately passed in. In the case of a patient, who attempted suicide by cutting his throat more than a year ago, and who has worn a tracheotomy-tube for eight months past, thyrotomy was performed ten days ago, by Mr. Pugin Thornton, the very able assistant surgeon of the hospital, who has previously performed two similar operations. The object of the operation was to take away a web which had grown below the level of the true vocal cords, and almost completely blocked up the calibre of the air-tube. It was hoped that the operation would be the means of restoring the patient's voice, and rid him of the infirmity of always wearing a tracheotomy-tube. After separating the alæ of the thyroid cartilage, the web was completely excised, after which the edges of the tracheotomy orifice were pared, and the soft tissues of both wounds approximated by silver stitches. The patient lost but little blood, and, in spite of the danger and difficulty of the operation, is now doing well. He can answer questions in a hoarse tone of voice. In this respect, however, it is of course too early to judge the ultimate result. The breathing through the mouth is regular and tranquil, and the wound in the neck is very nearly closed.

This letter will suffice.

BEVERLEY ROBINSON, M. D.

Proceedings of Societies.

THE CANADIAN MEDICAL ASSOCIATION.

THE sixth annual meeting of this Association was held August 7th, in St. John, New Brunswick, J. A. Grant, M. D., of Ottawa, in the chair. The attendance was large, and an unusual number of new members were admitted.

The President, in his address, referred to the fact that under the new law in the province of Ontario, the three bodies, allopathic, eclectic, and homœopathic, had met in council to deliberate on medical affairs, and that, however equivocal such an assembly might appear, the gratifying result was that not a single homœopathist or eclectic had passed the board as such since the law had been in force. In regard to medical education, the necessity of one standard of preliminary requirement for all the provinces was dwelt upon as indispensable to a high standard of medical attainment.

The President then touched on the subject of training-schools for nurses, on the improvement of medical literature in Canada, and on the propriety of taking sanitary measures in view of the possible approach of cholera. After the appointment of committees, the following officers were elected for the ensuing year:

President, Dr. Marsden, of Quebec; Vice-President for Ontario, Dr. H. H. Wright, of Toronto; Vice-President for

Quebec, Dr. Hingston, of Montreal; Vice-President for Nova Scotia, Dr. Jennings, of Halifax; Vice-President for New Brunswick, Dr. S. Z. Earle, of St. John.

After the transaction of the usual business, it was decided that the next meeting be held in Niagara, on the first Wednesday in August, 1874, and the convention adjourned.

THE BRITISH MEDICAL ASSOCIATION.

THE last annual meeting of this Association was in every respect a great success. The number of medical gentlemen assembled was larger than on any previous occasion. Twelve hundred were expected, and the officials found themselves called upon to provide for twice that number. Many distinguished foreigners took part in the proceedings. The business of the Association was transacted with energy and enthusiasm, and time was found for many interesting excursions and social pleasures in the intervals.

Bibliographical and Literary Notes.

ART. I.—*The Effects of High Atmospheric Pressure, including the Caisson-Disease.* By ANDREW H. SMITH, M. D., Surgeon to the Bridge Company. Published by the New York Bridge Company, 1873.

THIS essay, which received the prize of the Alumni Association of the College of Physicians and Surgeons, is in the form of a report to the directors of the Company. It begins with a sketch of the medical history of compressed air as employed in mining and engineering operations. It next devotes a short chapter to the New York Caisson which was sunk in 1872, under the immediate observation of the writer. The public have no conception of the vastness of this undertaking, the caisson covering an area equal to seven city lots of 25 × 105 feet each, and having been sunk to a depth of eighty feet below the surface. From fifty to one hundred and twenty-five men were employed for several months in excavating beneath the caisson, in an atmospheric pressure which at last attained the figure of thirty-six pounds additional to the square inch. The caisson was in effect a huge diving-bell, upon the top of which the pier was erected, the stone-work being built up in proportion as the caisson descended, so that the top of the masonry was always kept above the surface of the water.

One hundred and ten cases of the caisson-disease occurred, of which three proved fatal.

After considering the effects of these high pressures upon the various organs and functions, the writer proceeds to a careful description and analysis of the caisson-disease. This he defines as follows: "A disease depending upon increased atmospheric pressure, but always developed after the pressure is removed. It is characterized by extreme pain in one or more of the extremities, and sometimes in the trunk, and which may or may not be associated with epigastric pain and vomiting. In some cases the pain is accompanied by paralysis, more or less complete, which may be general or local, but is most frequently confined to the lower half of the body. Cerebral symptoms, such as headache and vertigo, are sometimes present. The above symptoms are connected, at least in the fatal cases, with congestion of the brain and spinal cord, often resulting in serous or sanguineous effusion, and with congestion of most of the abdominal viscera."

The chief cause of the symptoms, he believes, is to be found in the changed circulation which results from the pressure.

The treatment consists in relieving the pain by anodynes, and in endeavors to restore to the vessels the tone which they have lost. For this latter purpose, ergot is highly recommended. Placing the patient in a compressed-air bath is also suggested, it having been found that a return into the caisson always dissipates any existing pain.

The remaining chapters are devoted to illustrative cases, and to practical suggestions for the management of the workmen.

This sketch conveys but little idea of the interest which Dr. Smith has contrived to communicate to his subject. The paper contains a mass of physiological information, many interesting and original experiments, and careful deductions, all presented so clearly and simply as to make it most excellent and interesting reading, even to those whom the title "caisson-disease" in itself would hardly attract.

Art. II.—*A Practical Manual of the Diseases of Children, with a Formulary.* By Edward Ellis, M. D., etc. Second edition, 12mo, pp. xvi.–340. Philadelphia: Lindsay & Blakiston, 1873.

This work is a reprint from the second English edition, furnishing a very condensed account of the affections of childhood and their management.

With the multiplicity of works thrown upon the profession for perusal, one devoid of verbosity is certainly commendable, but it should not be cut short at the expense of minuteness of detail; therefore, we are somewhat disposed to doubt the comparative value of so many "manuals" either for the student or practitioner. Should any, however, prefer such a work to the excellent treatise of Meigs and Pepper, or that of J. Lewis Smith, the one under notice will be found a safe book to follow, as it is especially to be commended for the *treatment* of disease, it being essentially the same as is recommended by our American writers.

In discussing "tuberculosis" the author believes that gray tubercle is the primary deposit, which, undergoing fatty degeneration, forms the yellow tubercle. No distinction is made between acute and rapid tuberculosis. "Spinal irritation" is considered as identical with congestion, which is opposed to the view of Hammond,[1] who describes it as due to anæmia. Diphtheria and membranous croup are considered contagious. The distinction is tolerably well drawn between spasmodic, inflammatory, and membranous croup. In this country the true croup is probably much less frequent than in England. From our own experience as well as that of Dr. Ware and others[1] we are inclined to doubt the statement of the author that acute laryngitis in children is a very dangerous affection. The prognosis in "hydrocephalus" is regarded more hopeful than the facts seem to warrant. The author seems to infer that *veratrum* is the sheet-anchor in many diseases in the estimation of "Americans." We are not supposed to know what particular remedies the mass of American physicians are in the habit of prescribing, but, by reference to some leading American authorities, we find the above-named remedy recommended in only a few typical cases. So far as we are concerned, we are averse to the practice of prostrating a patient nearly to death's door in diseases which are self-limited, and which tend to destroy life by asthenia. The author, it may be well to say, does not recommend it on his own responsibility. In cases of congenital "cyanosis" the author recommends the change of posture without alluding to the position advised by C. D. Meigs[2]—the child being placed on its right side with the shoulders elevated to an angle of forty-five degrees. If one child in a family has died of tubercular meningitis, the mother is advised to nurse none of a subsequent birth. Two hundred and twenty-seven receipts are given at the close of the volume.

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[1] "Diseases of the Nervous System."

The style of the author is sufficiently clear, but the book shows the want of careful proof-reading.

Books and Pamphlets Received.—Skin-Diseases; their Description, Pathology, Diagnosis, and Treatment. By Tilbury Fox, M. D., London, Fellow of the Royal College of Physicians, London, etc., etc. Second American from the third London edition, rewritten and enlarged. With a Cutaneous Pharmacopœia, a Glossarial Index, and Sixty-seven additional Illustrations. New York: William Wood & Co., 1873.

A Manual of Practical Hygiene, intended especially for Medical Officers of the Army and for Civil Medical Officers of Health, by Edmund A. Parkes, M. D., F. R. S., Professor of Military Hygiene in the Army Medical School, etc., etc. Fourth edition. London: J. & A. Churchill, 1873.

Coccyodynia. A Paper read before the Michigan State Medical Society, at Saginaw, June 12, 1873, by Edward W. Jenks, M. D., Profesor of Med-

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[1] *Vide* Flint's "Principles and Practice of Medicine," 1873.

[2] *Vide* Meigs and Pepper's "Diseases of Children," p. 138.

ical and Surgical Diseases of Women, and Clinical Gynæcology, Detroit Medical College. Lansing, 1873.

University of Nashville, Department of Medicine and Surgery. The Twenty-fourth Annual Announcement of Lectures for the Session of 1873–'74, with a Catalogue of Graduates in 1873. Nashville, 1873.

Announcement and Catalogue of the National Medical College, the Columbian University, Washington, D. C., for the Fifty-second Session, 1873–'74. Washington, D. C., 1873.

Six Months under the Red Cross, with the French Army, by George Halstead Boyland, M. D., ex-Chirurgien de l'Armée Française. Cincinnati: Robert Clarke & Co., 1873.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland, at its Seventy-fourth Annual Session, held at Baltimore, Md., April, 1873. Baltimore, 1873.

The Hand-book for Midwives. By Henry Fly Smith, B. A., M. B., Oxon., M. R. C. S., etc. London: Longmans, Green & Co. Boston: James Campbell, 1873.

A Hand-book of Hygiene, by George Wilson, M. A., M. D., Edinburgh, Medical Officer, Convict Prison, Portsmouth. London: J. & A. Churchill, 1873.

Thirty-second Annual Announcement of the St. Louis Medical College; Winter Session, 1873–'74, and Catalogue for 1872–'73. St. Louis, 1873.

University of Bishops' College. Third Annual Announcement of the Faculty of Medicine, Montreal. Session of 1873–'74. Montreal, 1873.

An Account of the Cholera as it appeared at Nashville, in the Year 1873. By W. K. Bowling, M. D. Nashville, Tenn., 1873.

Transactions of the Kentucky State Medical Society, Eighteenth Annual Meeting, held April, 1873. Louisville, 1873.

Translations.

Propylamine and Trimethylamine in the Treatment of Acute Articular Rheumatism.—(Remarks on Propylamine, by Prof. Amenarius, of St. Petersburg, *Journal de Pharm. et de Chimie, 3ᵉ série, t.* xxxv., 1859.—Notes on Propylamine and the Organic Products in which it is contained; Dr. Jean de Kaleniczenko, Professor at the University of Charkow (Russia). J. B. Baillière & Son, Paris, 1869.—Dr. Paquelin, in *La Tri-*

bune Médicale, March 9, 1873.—*Bulletin de Thérapeutique*, March 15, 1873.—Note read at the *Société Méd. des Hôpitaux*, January 16, 1873, by Dr. Dujardin-Beaumetz. Published in *Rev. de Thérap. Medico-Chirurgicale*, March 15, 1873.—*Le Mouvement Médicale*, March 22, 1873.)

The first application of propylamine to the treatment of acute rheumatism was made by Prof. Amenarius. He obtained very excellent results in 250 cases of acute and chronic rheumatism, which he treated by this method from 1854 to 1856. For several years very little attention was paid to this valuable remedy; it is now, however, very extensively employed in Paris. Dr. John M. Gaston, to whom the Russian professor communicated this method of treatment, has recently published an article on this subject in the *Indiana Journal of Medicine*. He states that a very marked relief is always obtained in from thirty-six to forty-eight hours. Though propylamine and trimethylamine are both derived from the same sources and composed of the same chemical equivalents, the manner in which the elements of the latter are combined is quite different. It is not improbable that a certain proportion of trimethylamine is always present with the propylamine employed in medicine.

The specimens used by Dr. Beaumetz were obtained from herring-brine. The odor is rather disagreeable, but patients never refuse the medicine, even in large doses. Seven cases are reported by Dr. Beaumetz, of which the following is a *résumé:*

The first case was one of subacute rheumatism which had, for five months, resisted every variety of treatment, purgatives, quinine, blisters, tincture of iodine, etc. An appreciable amelioration was produced in thirty-six hours, and, at the end of a month, the patient was able to leave the hospital and resume his work. The propylamine was administered during three weeks, the dose not having exceeded one gramme.

The second case was still more decisive. It was that of an acute articular rheumatism, the third attack, the preceding ones having lasted from four to five weeks. Twenty drops of propylamine were administered, and the next day there was very little pain felt by the patient; four days after he was completely cured. The third case was a first attack of acute articular rheumatism. Treatment was commenced with one gramme of the medicine on the 21st of September. Patient left the hospital completely cured October 6th. The fourth case was a third attack of acute articular rheumatism, commencing on the 15th September. Treatment was commenced on the 3d October, and patient was cured on the 21st. The fifth case was the fifth attack of acute articular rheumatism, and had existed fifteen days when treatment was commenced. Patient was cured in six days. The sixth case was a third attack of acute articular rheumatism, and was cured in six days by the administration of from half to one gramme of the propylamine. The total duration of the disease was eight days. The seventh case was a second attack, and was cured in eight days, the disease having existed ten days. The nature of the cases was accurately determined by the pulse, thermometer, etc. No other medication was employed. In one of the cases the heart had been previously attacked, but no new cardiac complications were noticed in any of the cases reported. The medicine is to be administered in solution; the taste may be partially disguised by the addition of the aromatic syrup of peppermint. From half a gramme to a gramme and a half may be given at a dose.

Menstrual Jaundice.—The close relation existing between disturbances of the female sexual organs and affections of the liver is well known, to which is perhaps due the relative frequency of hepatic disease in females. Senator has recently contributed an article in which he draws attention to the hitherto apparently unobserved coexistence of menstrual disturbances and jaundice. Four cases are recorded, in all of which, up to five repetitions, before or during the menstrual period, with slight or no loss of blood, jaundice appeared, continuing several days, and accompanied by corresponding constitutional disturbance and gastric derangement. With the appearance of a more copious flow the symptoms disappeared, leaving the patient well up to the next menstrual period. It was evident that the cause was biliary obstruction, from the simultaneous enlargement of the liver, the clay-colored stools, and presence of biliary salts in the urine, which were detected in one case. One of the patients complained of hæmorrhoids for the first time during this period. Another of the cases was interesting in having been affected three times during the first months of a pregnancy, one and a half year before the occurrence of the attacks of menstrual jaundice, with jaundice, benign in character, which is remarkable, as jaundice is usually malignant when occurring in connection with pregnancy.

Senator accounts for this condition by a hyperæmia of the liver, which can easily cause swelling of the mucous membrane of the biliary passages, and their consequent occlusion. It is well known that obstructed menstruation is frequently accompanied by hyperæmia of the liver, as also of other organs, as the thyroid body, and that vicarious menstruation from the stomach, lungs, nose, etc., takes place.

Though the disturbances occasioned by menstrual jaundice may be slight and transitory, remedial interference is nevertheless recommended to prevent the possibility of the accession of some severer form of hepatic disease. In the above cases the use of the warm bath with the internal use of Carlsbad salts, with moderate diet, was found beneficial.—*Centralblatt*, 1873, No. 14.

Inequality of the Pupil in Unilateral Affections of Different Parts of the Body.—F. Roque (*Archives Physiol.*, 1872) since 1869 has confirmed and extended his observations that, in a large number of pulmonary affections and diseased conditions of the bronchial glands and pericardium, an inequality of the pupil could be observed. The enlarged pupil corresponds to the diseased side, and, when both sides are affected, to that one in which the disease is acute. Disease of the bronchial glands has a greater influence of dilatation of the pupil than, perhaps, the existing pulmonary affection on the other side; in an acute inflammation of the right lung and of the pericardium, the enlarged pupil is found on the right side; this difference can be detected more easily with widely-dilated than with narrow pupils. To these observations the author has added that one-sided affections of the trunk and limbs can call forth this difference in the pupil. Diseases of the lymphatic ganglions, especially, exert a peculiar influence on the production of this phenomenon, which becomes more marked if the dilatation necessary for examination has been produced by the application of electricity. In one-sided affections of the most varied kind (cancer of the parotid, caries of teeth, abscess of breasts, non-articular joint disease, complicated fracture, coxalgia, etc.), wherever the electric current is applied, the dilated pupil is found to correspond to the diseased side; in a healthy individual both pupils become equally dilated by the electric current. Of the abdominal viscera the author could confirm his observations with regard to hepatic disease. The author believes that, under the influence of a one-sided affection, a peculiar condition of irritability of one-half of the cilio-spinal centre is developed, through which the radiating fibres of the iris are made to contract.—*Centralblatt*, February, 1873.

Treatment of Angina Dipththeritica. (Dr. Lolli, *Gaz. Med. Ital. Lomb.*, March 15, 1873.)—1. Do not cauterize, except in case of gangrene. 2. Do not bleed, purge, or vomit, unless exceptionally in well-determined cases. 3. A substantial regimen proportioned to the appetite. 4. Respect, and if necessary favor, the cutaneous functions (bed, cataplasms, sinapisms, etc.); follow this indication until by the local and general symptoms it may be safely concluded that the morbid principle is completely eliminated. 5. As a local application and for internal use, and also as an inhalation in case of diphtheritic laryngitis, employ the following mixture, varied as to its concentration and proportions according to necessity:

℞. Aq. calcis. ℥ iv.—xii. Liq. fer. sesquich. ʒ ss.—ij.
Acid. carbolic gr. j.—℈ j. Mell. ros. ℥ j. M.

S. Shake the bottle, and use as a gargle or pencil the fauces every two hours. A portion of this mixture may also be diluted in four, six, or eight times its volume of water or tea, and a spoonful swallowed every two hours, alternating with the local applications. 6. The results of this method of treatment during several years of conscientious observation: mortality zero; or, taking into account the deaths from complications, incomplete treatment, etc., two per cent. Medium dura- of the disease about eight days. The extension of the disease to the respiratory organs was rare and not grave. Secondary affections (paralysis, arthritis, dropsy, etc.) none or very rare.

Compression of the Facial Artery for Epistaxis. (*Rev. de Thérap. Méd. Chirurg.* and *Gaz. Med. Ital. Lomb.*, May 17, 1873.)—Dr. Marvin, of Geneva, alludes to the disagreeable process of plugging the nares either with Bellois's sound, or an elastic urethral sound, and states that he finds the following process preferable: As the blood generally comes only from one side of the nose, and most frequently from the anterior third of one of the nasal fossæ, he merely compresses the corresponding facial artery against the superior maxilla near the angle of the nose. The afflux of blood to the cavity of the nose is thus diminished, and the epistaxis ceases almost instantly. Persons suffering from excessive nasal hæmorrhage on the streets, boats, or cars, may thus be readily and promptly relieved.

Bessières, in *La France Médicale*, 1873, recommends plaster of Paris for arresting epistaxis. Plaster is known as a hemostatic in cases of leech-bites, cuts, and excoriations. The mode of using it in epistaxis is as follows: Sift a spoonful of unslacked plaster through a coarse sieve, place it in a tube of paper, or light card-board, and blow it forcibly into the nostril, after having caused the patient to blow his nose.

Miscellany.

The Late Dr. H. S. Hewit.—At a meeting of the House Staff of Charity Hospital, held August 21, 1873, the following resolutions were unanimously adopted:

Whereas, It has pleased an all-wise Providence to remove by death Dr. Henry Stuart Hewit: therefore—

Resolved, That we are called upon to mourn the loss of one whose counsel and advice have been sources of profit and pleasure to all.

Resolved, That, in his official relations to this Hospital as President of the Medical Board and Visiting Surgeon, he has shown a high classical and medical culture, which, combined with integrity and personal affability, has endeared him to many by ties of personal friendship, and gained the respect of all who knew him.

Resolved, That copies of these resolutions, duly authenticated, be sent to the family of the deceased, and printed in the medical journals of this city.

W. Oliver Moore, M. D.,
W. E. Ford, M. D.,
G. O. Morrison-Fiset, M. D., } *Committee.*

The following series of resolutions was unanimously adopted by the Medical Board of Charity Hospital:

Whereas, Dr. Henry S. Hewit, our late President, and for a long time our colleague in the Medical Board of Charity Hospital, has been suddenly stricken down by the hand of death, while in the active discharge of his professional duties: therefore—

Resolved, That in the death of Dr. Hewit the Hospital has lost a faithful and efficient officer.

Resolved, That, having endeared himself to us, his colleagues, by his frankness, sincerity, and earnestness of character, united to the many other virtues he possessed, we mourn in him the loss of a true friend and a zealous colaborer.

Resolved, That, as a memorial to our late President, the Medical Board request the Commissioners of Public Charities and Correction to have the following inscription placed upon the tablet in the hall of the Hospital: "Henry S. Hewit, M. D., President of the Medical Board of Charity Hospital, died August 19, 1878, while on duty as one of attending surgeons."

Resolved, That we tender to the family of the deceased our sincere sympathy in their deep affliction.

Resolved, That these resolutions be entered upon the minutes of the Medical Board; be published in the New York Medical Journal and the *Medical Record*, and that a certified copy of the same be forwarded to the family of the deceased.

I am very truly yours, in haste,

Alex. W. Stein,
Secretary pro tem. Medical Board Charity Hospital.

The Use of the Different Oxidized Ethereal Oils in Phagedenic Ulcerations.—Cheron (*Med. Neuigkeiten*) summarizes his experience as follows: 1. Camphor is the type of oxidized ethereal substances, and their fumes, as also the substance in powder, have the property of arresting destruction of tissue and causing the healing of phagedenic and lupoid ulceration. With the substances devoid of oxygen, of which the oil of turpentine is the type, such results cannot be attained. 2. Pulmonary cavities of tuberculous patients, in many cases, heal in a short time after the inhalations of these substances. 3. The sputa of patients treated in this manner have been examined according to Fenwick's method. The elastic fibres which were at first detected, gradually diminished after a continued use of the remedy, and finally disappeared entirely, proving the great value of this remedy in phthisis pulmonalis. 4. The freed vapor of these substances is not disseminated throughout the atmosphere of the room. 5. All the oxidized ethereal oils can be used with equal success. 6. The preference, however, must be given to the ol. lauri camph. and ol. cedri, the pleasant and sweet smell of which is well borne by the patients. 7. Continued high fever, rapid progress of the malady, advanced emaciation and loss of strength, contraindicate the use of these substances. 8. The torpid and slowly progressing phthisis, abundant expectoration, with cough and dyspnœa, and, toward the end, of a pneumonia, this method has proved of therapeutic value. 9. Under the influence of this treatment, an easier expectoration results, the cough and dyspnœa cease, the appetite returns, the strength increases, the hectic fever diminishes and finally disappears, the patient regains weight, and in many cases all symptoms of disease disappear and a complete recovery results. 10. Treatment by these means does not exclude the use of more active agents—cod-liver oil, quinine, and good diet. An arrest of the destruction of the pulmonary tissue is accomplished, giving the physician an opportunity to treat the tuberculous diathesis. 11. Hitherto, satisfactory results have only been observed after the use of camphor, as in the treatment of gangrene; for which the remedy has been considered a panacea. The other oils, however, have a similar and, in some cases, greater effect, the truth of which will be recognized after a more extended use.—(*Memorabilien*, 3, 1873.)

Plastic Surgery of Depressed Nipple.—In those cases where the nipple is depressed in such a degree as to prevent every attempt at aspiration and the margins of the crater-like depression only approximate closer by the use of mechanical irritation, Kehrer (*Centralblatt*, April 12, 1873) proposes a plastic operation—excision of the areola—whereby the nipple is rendered level, and, upon consequent artificial suction, prominent. The operation consists in a circumcision of the areola, an incision from above, corresponding to the margin of the areola, being made to meet an incision from below at an acute angle at the middle of the lateral margin of the areola. The skin and smooth muscular fibres are then carefully separated in the direction toward the nipple from the underlying connective tissue, care being taken not to injure the lacteal vessels, until the nipple is completely isolated. A portion of the flap, ½ mm. in width, is then cut off, the hæmorrhage checked by cold, and the edges of the wound united. After union has taken place, the nipple is on a level with the surrounding tissue, or projects slightly beyond. The use of suction-glasses is then indicated, care being taken to prevent vesication through over-use. The above operation has been performed on two patients, in one case on both breasts.

Appointments, Honors, etc.—Dr. William A. Hammond has resigned his two professorships in the Bellevue College Hospital. Dr. Janeway has been appointed Lecturer on Materia Medica. Dr. J. Drummond Burch has been elected Professor of Anatomy, and Dr. W. Y. Gadberry Professor of Principles and Practice of Surgery and Clinical Surgery, in the Louisville Medical College. Both gentlemen are of Yazoo City, Miss. Dr. Agnew has been appointed Professor of Sanitary Science in Victoria College, Toronto. Dr. John Mitchell Bruce has been elected Assistant Physician to Charing Cross Hospital, and Mr. William MacCormack Surgeon to St. Thomas's Hospital. Prof. Hughes Bennett, on account of ill-health, is about to vacate the chair of Physiology in Edinburgh, and already there are a number of candidates in the field. Of these Prof. Rutherford has unquestionably high claims, not only as a former assistant of Prof. Bennett, but as an able and effective cultivator and expositor of physiological science.

Retro-uterine Hæmatocele.—F. Weber (*Berl. Kl. Wochenschrift*, 1, 1873), from the observation of twenty-three cases of hæmatocele, concludes that this malady chiefly affects young anæmic individuals, most frequently among those accustomed to hard labor. In six of the twenty-three cases, venereal excesses were the partly proven, partly presumable causes; in four cases they were the direct cause. According to the author, occupation at the sewing-machine is also a factor in the etiology of hæmatocele. The right perimetrium was looked upon as the source of the hæmorrhage in eighteen cases. The author considers the prognosis as favorable, as none of his cases terminated fatally—a result which he attributes to his method of treatment (ice-bladders, tincture of chloride iron internally, and abstinence from puncture). Ten cases resulted in a complete cure. Three cases terminated with a rupture of the extravasation *per rectum.*

Neuralgia of the Testes.—J. Lazarus (*Wien. Med. Presse*, No. 30, 1872), in regard to the etiology of this affection, enumerates, among the lesser known causes, chronic disorders of digestion, which are often accompanied by pain in the testicles; also, long abstinence from sexual intercourse, when it is apparently the consequence of a temporary debility of the virile powers, can give rise to neuralgia. Besides paying attention to various casual indications, the author has had remarkable success, in many obstinate cases, by the internal administration of sulphate of zinc (0.2 to 200), three times a day, one table-spoonful, as also hypodermically injected behind the scrotum of a solution of the same salt (0.06, 10, 12).

Treatment of Mercurial and Senile Tremor with Hyosciamine.—Oulmont (*Gazette des Hôpitaux*, No. 4, 1873), who had already given hyosciamine effectually in neuralgia—although in these cases it does not act as quickly as opium or belladonna—has found it very effective in mercurial and senile tremor. Of six patients treated with it, suffering from the former affection, one was cured and two improved; in three of the cases the affection had already existed from three to five years. In two patients with senile tremor considerable improvement resulted. The author gave it in doses of three mgrm. *pro die*, increasing to ten, twelve, and seventeen mgrm. *pro die.*

Deaths from Chloroform.—Prof. W. H. Mussey, of Cincinnati, reports a death from chloroform given at the request of a patient, whose thumb he was about to amputate. One-third of an ounce of the anæsthetic was used, and the patient ceased to breathe five minutes after its administration began. No disease of the heart or other organs was revealed by *post-mortem* examination.

A lady died on Wednesday last (*Lancet*, August 23, 1873), at the house of a dentist in Brighton, while under the influence of chloroform.

Inhalations of Oxygen in the Treatment of Hydrophobia.—Laschkewitsch (*Gaz. Méd.*, Paris, 1872, No. 50) has administered inhalations of oxygen to a peasant, who, ten weeks before, had been bitten by a mad wolf. The tetanic muscular contractions ceased, the cyanosis disappeared, and the exacerbations of violence gave place to a quiet, gentle condition. Notwithstanding the fatal result (due probably to the inattention of the nurses, who discontinued the oxygen inhalations), the author recommends the use of this agent to the attention of the profession.—(*Centralblatt*, No. 18, 1873.)

Righteous Indignation.—The *Boston Medical and Surgical Journal* notices with some warmth the recent activity of the State constabulary in the enforcement of the liquor law, and complains that the people are subjected to these daily outrages by a "miserable set of pie- and bean-fed politicians, who do not appear to be acquainted with even the most common and simple laws of health." The *Journal* calls on country practitioners to use their influence to release the State from a species of tyranny that is making it the laughing-stock of the world.

A Midwife of the Olden Time.—In "Hayward's New England Gazetteer," under the head of Marlborough, Vt., it is stated that Mrs. Whittemore, wife of one of the first settlers of that region, "officiated as midwife at more than two thousand births, and never lost a patient." She possessed great vigor of constitution, and frequently travelled on snow-shoes from one place to another, by night and by day, serving as nurse and midwife, going through with incredible hardships and exposures. She lived to the age of eighty-seven years.

External Use of Chlorate of Potash in Open Cancers.—Burow (*Berl. Kl. Wochenschrift*) has tried the effect of sprinkling chlorate of potassa either in powder or crystals on cancerous ulcerations. He concludes, from his still very imperfect observations, that the remedy causes a diminution and shrinkage of the villosities, resorption of neighboring ulcerations, diminution of the secretion, and lessening of pain. Whether a cure can result has not yet been decided.—(*Centralblatt*, 21, 1873.)

Doctors on a Strike.—The *Gazette Hebdomadaire* mentions a strike of medical practitioners of the Canton of Aargau, Switzerland, on account of the miserably small fees allowed them for visiting the poor. It appears that a physician is entitled to about fifteen cents for visits at a distance of nearly a mile.

Surgery on the Battle-Field.—We take the subjoined extract from a translation by Dr. Alcock of N. Pirogoff's "Besichtigung der Militair-Sanitäts-Anstalten in Deutschland, Lothringen, und Elsass," published in the *Medical Times and Gazette*, August 16, 1873:

Dr. Pirogoff devotes the third chapter of his book to the question—"In how far has the condition of the wounded on the battle-field immediately after the action been improved by the present mode of warfare?" and concludes with the opinion that their "condition is, under these circumstances, nothing better than in former wars."

In the first and most important particular—the removal of the wounded from the field—all efforts at improvement have been more than counterbalanced by the precision, range, and rapidity of the latest fire-arms; so that, in the race between the means of saving and the modes of destroying life, the former have been completely outstripped. At the beginning of the war the Prussian Government enrolled 2,700 surgeons and provided hospital effects for 40,000 beds, and yet after the first battle medical aid was wanting. The "sanitary detachments" belonging to the corps engaged had not arrived, and, even were they present, would not have been sufficient.

At Saarbruck the natives for two whole days drew the wounded from the fields in country carts, and brought them to their own homes. After the battle of Weissenburg some of the wounded lay for two days where they fell, and in Remilly a street was pointed out in which 1,000 wounded were laid down, having been travelling thither for two days and two nights from the field of Gravelotte. From the scene of action at Metz 3,000 wounded were sent to Gorze, where Professor Langenbeck with but four assistants was; and such was the pressure that they could receive only the most temporary dressing prior to being passed on to places of greater accommodation.

The self-evident cause of the delay in removing the wounded from the field was of course a deficiency of carrying power. For each severely wounded man four stretcher-bearers are required; and as the ambulances for affording the first and most temporary assistance cannot, owing to the extended range of present weapons, be placed nearer to the battle than three-fourths of a mile, it consequently follows that each set of bearers would be unable to accomplish the distance to and fro more than ten times in one day; this, too, is supposing that they can proceed in each case directly without being turned aside by unevenness of the ground or the approach of heavy firing, and assumes also that they are not impeded by the caution needed in carrying such burdens.

At the lowest calculation, then, 400 bearers will be required to bring in 1,000 wounded. This being the case, and as only 400 bearers were allowed to each Prussian army corps, it is easy to understand why the wounded lay whole days and nights upon the field of battle.

However, even in the most civilized country devoting the greatest attention to the development of its military resources, the government will be naturally unwilling to surrender so large a proportion of fighting men to a non-combatant duty. Still the fact is no less established, that unless stretcher-bearers be provided to the extent of 400 to every 1,000 helpless men, the wounded must suffer unduly-prolonged exposure after every important action. There is, therefore, but one approximate solution of the difficulty possible, viz., a preconcerted arrangement between the resources of the medical administration and those of private help; and this is a necessity so pressing that one cannot comprehend how it continues to be deferred when so many wounded are seen to die from being left too long to their fate on the battle-field. In the last war the authorities admitted with reluctance the motley detachments of stretcher-bearers collected in haste by private help, and it is quite intelligible that these undisciplined crowds may have spread disorder or hindered the movements of the troops;

but these crowds would not have been undisciplined had the authorities, confessing the relatively insignificant number of their sanitary detachments, applied in time to the private societies for coöperation and assistance.

By suitable training under experienced officers "carrying companies" might have been formed, all confusion and obstruction thereby avoided, and very many wounded retrieved from death. Such an organization would not only bring timely aid to the stricken, but would vastly increase the confidence of those who are still unhurt.

Dr. Pirogoff sees a second very important reason why the rendering of first help in the late war was so defective in the rule that a Prussian surgeon is before all things a soldier, whose duty is to be performed under fire. Consequently, up to September, 1870, forty, and later on eighty, medical officers had fallen in battle. "Wherefore" (he continues) "allot to one a double duty?" The origin of this superfluous medical heroism dates from the Napoleonic wars, when Larrey introduced the "flying ambulance," whose mission was to plunge into the thickest fight and there to tend the wounded amid a rain of bullets. But we cannot regard primary operations in the same light as our predecessors, nor consider them necessary, successful, or even blameless. We cannot now maintain that an amputation runs less risk in transport than a patient with a broken limb. No one would now leave a surgeon and a wounded man under fire for bullet-extraction or for dressing. There is, therefore, but one occasion for help in action—hæmorrhage from the larger vessels—that occurs but seldom, and its control by pressure every soldier can be taught. Hence are trained stretcher-bearers above all things needful. And not only is the custom of sending surgeons under fire useless, but it is disadvantageous, since they—especially the younger—will avoid the bandaging depots and movable hospitals, and seek in action opportunities for winning the Iron Cross and other decorations. So long as this regulation stands it will be easily intelligible how Corny and Gorze (where Langenbeck labored) and Remilly (where the wounded amounted to several thousands) were without surgeons. Again, the surgical work done in the heat of battle is but a waste of power, and scarcely less useless than the feverish practice of the bandage places. Dr. Pirogoff, discrediting the value of operations done under such circumstances, adds, as a further reason why they should not be attempted, that the rapid firing of recent weapons produces such a simultaneous crowd of wounded that the ambulances are immediately thronged, and reliable diagnosis between the cases suitable for operation and for conservative surgery rendered impossible. He therefore assigns to the surgeons at the bandage places the duty of using means to avert impending danger—of transmitting the wounded ticketed with diagnosis cards to prevent all further painful and unnecessary examination, and of dividing the wounded into "those hopelessly injured," "those requiring prompt attention," "those fit for transport," and "the slightly hurt."

Above all things is necessary the quick transition of the wounded through the temporary dressing-depots to a place of permanent rest, for even those most demanding surgical interference will bear immediate transport better than after a capital operation.

From this it appears that the experience of Dr. Pirogoff convinces him of the futility of primary operations, which, he says, were only undertaken to any extent in Strasburg on account of the proximity of the permanent hospitals and the nature of the big-gun injuries, and these only proved successful while the hospitals were uncrowded at the commencement of the siege.

The conveyances in use for removing the wounded are far from perfect. In this respect Europe is behind America; and at the same time the effect of the means of carriage for good or ill upon the sufferers is incalculable.

Finally, only on their arrival at the private hospitals or trains does the influence of private help come into play, and "up to this point the condition of the wounded is in no way better than in former wars."

New Views on Diabetes.—M. Lecorché has submitted to the Academy of Medicine of Paris the following opinions respecting the nature of diabetes: 1. The current theories touching the pathology of diabetes refer only to certain varieties of glycosuria, which have nothing to do with diabetes. They do not explain diabetic glycosuria. 2. Glycosuria, in diabetes, is only a secondary circumstance; the principal phenomenon is a tendency to disassimilation of protein substances. Diabetes may, in fact, be called azoturia. This disassimilation is the very essence of diabetes, and is characterized by the enormous quantity of urea which the patient is daily losing. 3. This protein disassimilation is the primary cause of glycosuria, which latter is simply an unimportant sequel of that cause. Protein disassimilation requires combustion, and during this combustion the oxygen leaves unattacked any glycosic substance formed in the economy; hence the existence in the urine of a quantity of sugar, which quantity increases with the amount of urea. 4. These views of the pathology of diabetes are of capital importance as regards the treatment, for they pave the way to a rational mode of treating the disease. The theories hitherto offered do not admit of such a course, as they refer only to glycosuria.

In viewing diabetes as M. Lecorché proposes (i. e., as azoturia, of which the glycosuria is the consequence), there is, he says, only one way of contending with the disease, namely, to endeavor, by every means in our power, to stop the loss of urea experienced by the patient. To attain this end, we have only one mode of treatment at our command—the administration of cumulative remedies. Among these the principal are opium, arsenic, valerian, and perhaps bromide of potassium.

M. Lecorché promulgated these opinions before the Academy at the meeting of June 10th last, and promises to give further developments (and, it is to be hoped, experimental proofs), in the publication of lectures on diabetes delivered by him at the Faculty.—*Lancet.*

The Social Evil in St. Louis.—Captain McDonough, Chief of Police in St. Louis, in an official report, says: "I will recapitulate a few of the moral effects produced by the St. Louis Social Evil Law in this city, which, in my opinion, far outweigh any moral objections which have been, or can be, alleged against it.

"1. By this report it is shown conclusively that the number of public women has uniformly decreased each year.

"2. That they are more decorous in their manner in public.

"3. That the plying of their wicked trade upon the public streets has been almost entirely discontinued.

"4. That a considerable number of abandoned women have been reclaimed and restored to respectable life, and, in several cases, married.

"5. That clandestine, or private prostitution, which often develops into open vice, has been materially checked, through fear of the legal consequences of such indulgence, when brought home to the offender.

"6. That juvenile prostitution has been greatly diminished, if not wholly removed. . . . That the results have so far been encouraging, is beyond doubt.

"The most enthusiastic promoters of the measure could not have hoped for a larger or more beneficent success than has attended its workings during the two years in which it has been in force. . . . The young and the heedless have been warned by the police of the consequences of entering a life of shame. The number of bawds has largely decreased, and the deaths, formerly very numerous, in consequence of diseases concomitant on a life of shame, have in a great measure been prevented."

New Regulations for Military Medical Men in France.—The object is principally to educate young aspirants in military hospitals, while at the same time attending lectures and passing examinations for the degree of M. D. at any of the schools recognized by the Government, both in Paris and the provinces. After three years' successful probation, the candidates must repair to Paris, where they continue their studies, both at the large military hospital of Val de Grâce and at the Faculty.

The same regulations, somewhat modified, apply also to the military pharmaciens—a class of officers not known in this country, but who, in France, are highly educated, and must start with the diploma of Bachelor of Science.

To become a military medical pupil, a trial by competition must be undergone, and the candidate must prove, as to medicine, that he has passed examinations for Bachelor of Arts and Bachelor of Science, or that he has successfully studied medicine for one, two, or three years, the age of admission varying accordingly. Up to their concentration at Paris, the pupils receive nothing from the Government, and wear no uniform. Once incorporated at the Val de Grâce, at Paris, the pupils receive pay, and must appear in uniform. As soon, however, as the candidate has, after competition, been admitted a military medical pupil, the Government pays all the fees of the school. It remains to be seen how far young educated men will be tempted by these terms, and the ultimate prospects of the military career, to present themselves for competition.—*Lancet.*

Excision of Coccyx for Imperforate Anus.—At a recent meeting of the Paris Surgical Society, M. Verneuil called attention to the excision of the coccyx as a means of facilitating the performance of the operation for imperforate anus. Ten years since an infant was brought to him with the anus in a state of natural conformation, but having an imperforation at the distance of about a centimetre. As the end of the gut could not be found, Littré's operation was performed. At the autopsy it was observed that an excision of the coccyx would have enabled the rectal ampulla to be readily reached. Since then M. Verneuil has performed such excision in the cases of five boys and one girl, with the result of saving five of them without resorting to Littré's operation. The mere puncture of the ampulla he regards as dangerous, and only to be attempted as a means of diagnosis. Even when not indispensable, the excision much facilitates the operation and abridges its duration; it also facilitates the suture of the intestine to the skin, preventing thus infiltration of fecal matters and consecutive stricture. When the *cul-de-sac* of the rectum is placed very high, and is but slightly movable, it is to be feared that traction may lacerate its fragile parietes; but after excision of the coccyx the depression of the rectum is less necessary, for it can then be carried more backward, and fixed to the skin. This M. Verneuil did in three of his cases, and the anus thus carried back performed its functions very well at a later period. There is no incontinence of fecal matter, there being rather a tendency to coarctation, which may be overcome by the daily introduction of the little finger. There are cases of imperforate anus, however, in which this excision is not required; and the portion removed is usually very small.—*Medical Times and Gazette.*

Bloodletting Fifty Years ago.—Dr. E. A. Parkes, in the address on Medicine, at the recent meeting of the British Medical Association, said, in regard to bloodletting in the past:

There is, of course, no doubt that among the measures resorted to in those days, depletion was far more commonly practised than it now is. It was of daily occurrence to bleed, and often to bleed largely, and there can be little doubt that the plan was pushed to excess, especially in the period from 1820 to 1840. But I think it would be a mistake to suppose that all practitioners used depletion so largely as is commonly supposed. Some men, like Broussais, in Paris—partly from a theory, partly from opposition to others—were bleeders on a scale of magnitude we now shudder at; and even in this country there were men who were followers or rivals of this great Sangrado. But the generality of practitioners practised small bleedings, and seldom carried them to excess; in fact, at one time, bleeding was so little used that the head of the Naval Medical Department issued instructions to his surgeons to make more use of the lancet. A great change has now taken place, and the lancet is seldom used, and the time-honored practice of cupping is almost a thing of the past; and this, in my view, has not arisen from any change of type, of which I can see no proof, but to an improvement in diagnosis, and a more direct mode of treating the disease. But I am disposed to agree with some of our best practitioners, who believe that we have too much abandoned an agency which, when well used, is often powerful for good, and that it is not unlikely the pendulum may soon commence to swing the other way, though not, we may hope, ever to reach the extreme point which some of us can remember.

Typhoid in London.—At the moment of going to press we hear that in the parishes of St. George's, Hanover Square, St. Marylebone, and Paddington, there are no less than 104 families which have been attacked with typhoid. How many cases may be included in these families it is not possible to say at present, but we know of several instances where as many as five cases have occurred in one family, so that the estimate of 500 cases given in the *Times* on Thursday is probably not over the mark. Of these 104 families, 96 are known to have used, to a greater or less extent, the milk of the suspected dairy. The remaining 8 cases have not yet been investigated, but they are all, with one exception, open to the fallacy (which has been shown to have existed in some of the previous exceptional cases) that they may have imbibed the poisonous milk in the houses of friends or employers, if not in their own. In one case only there appear to be circumstances which preclude the possibility that the patient has ever had any of the suspected milk.

Sixteen cases have occurred in the Cripples' Home, and a seventeenth outside the Home, in a person who, on one occasion, unfortunately drank the milk of the establishment.

Of these 104 families, 18 are the families of doctors; a large proportion certainly, but not large enough to lend any color to the assertion of the Milk Company, that the infection was due, not to the milk, but to the doctors themselves. It must be remembered that in these parishes a considerable proportion of the permanent residents are medical men. The Cavendish Square district is, in fact, to doctors what Lincoln's Inn is to lawyers.—*Lancet*, August 23, 1873.

Boylston Medical Prizes.—At the annual meeting of the committee, held June 2, 1873, it was voted that prizes of one hundred and fifty dollars each be awarded to David F. Lincoln, M. D., of Boston, for a dissertation on "Electro-Therapeutics," and to William C. Dabney, M. D., of Charlottesville, Va., for a dissertation on "The Value of Chemistry to the Medical Practitioner."

The following are the questions proposed for 1874:

1. The Best Methods of preventing the Development and Spread of Small-pox.

The author of a dissertation on this subject, considered worthy of a prize, will be entitled to a premium of two hundred dollars.

2. The Development and Extension of Malignant Disease.

The author of a dissertation on this subject, considered worthy of a prize, will be entitled to a premium of one hundred and fifty dollars.

The following are the subjects proposed for 1875:

1. Original Researches in Medical Science.
2. So-called "Concussion of the Spine."

The author of a dissertation considered worthy of a prize, on either of the subjects proposed for 1875, will be entitled to a premium of one hundred and fifty dollars.

Dissertations on these subjects must be transmitted, as above, on or before the first Wednesday in April, 1874 and 1875, respectively,

Courage and Honesty.—We heartily indorse the conduct of the Medical Society of Dauphin County, Pa., in passing, at a special meeting held in Harrisburg, August 7th, the following resolutions:

Whereas, The Board of Managers of the Harrisburg Hospital, having elected a competent medical staff of regular physicians, did, by the following resolution passed subsequently to the said election, viz.:

" *Whereas*, It has been stated that if homœopathic medicines be procured, attendance will be furnished gratuitously by a homœopathic physician: therefore,—

" *Resolved*, That a case of homœopathic medicines be procured at a cost not exceeding $100, so that if any patients wish to be treated under that system it may be done by a physician of that school," attempt to introduce into the hospital a pretended system of medicine: therefore—

Resolved, That we cordially approve of and indorse the action of Drs. Curwen and Reily in resigning their positions upon the Board of Managers of said hospital.

Resolved, That we also most cordially approve and indorse the manly and high-toned professional action of the medical staff in promptly resigning their positions in said hospital.

Resolved, That we individually and as a Society hereby pledge ourselves not to accept any position in said hospital unless each and every member of the late staff of the hospital be reëlected by the managers of said hospital, and all other practice but that of the regular school of medicine be ignored.

R. H. Seiler, M. D., *President.*

New Means of Dilatation in Stricture of the Urethra.—It simply consists in the employment of a column of liquid about twenty metres high, established by means of a funnel, and containing about a pound and a half of water (boiled at 25° or 27°C.), and suspended above the patient's bed. An India-rubber tube (about two metres long), and provided with a cock in the middle of its length (so as to moderate or suspend the current of water), and having at its end a small glass pipe like an ordinary syringe, which is to be introduced into the meatus urinarius, connects the apparatus with the penis. The glass end being introduced, the cock is more or less opened at will, and slight pressure is exerted on the glans, to prevent the water from running outside. The water in the funnel is then forced down by its own weight, and runs down drop by drop, dilating the stricture without pain, and, through its local and antiphlogistic action, rendering the urethra pervious to sounds and bougies. The patient can himself apply the apparatus three or four times a day, and when it is removed the surgeon has only to make use of his sounds or bougies.—*Mouvement Médical.*

Homœopathy in the University of Michigan.—To answer numerous inquiries, the following preamble and resolutions, passed by the Board of Regents at a late meeting, are published:

Whereas, The Legislature of the State of Michigan, at its last session, reënacted the law of 1855, requiring the appointment of homœopathic professors in the Medical Department of the University; and, whereas, it has always been claimed by the Board of Regents that the law was an infringement upon the rights and prerogatives of the Board; and, whereas, the Supreme Court of the State has refused to grant a mandamus requiring the Regents to comply with the law, thereby substantially confirming their action: therefore—

Resolved, That we maintain the position heretofore taken, and decline to make the appointments required by the law.

Resolved further, That we do this in no spirit of factious opposition to the apparent will of the Legislature, but because we believe the true and best interests of the University demand it.

Resolved, That we reaffirm the former action of the Board expressing a willingness to take official charge of an independent school of Homœopathy, and connect it with the University, whenever the means shall be provided for the payment of its professors.

A Journey under Chloroform.—A novel, very interesting, and useful application of chloroform has just been made by Dr. Squarey, of the Soho Hospital. A lady had been subjected to an examination under chloroform on Tuesday last. The husband of the patient wished to move her as soon as possible to her home at Norwood, but, in her then condition of pain and exhaustion, a journey was out of the question. The advisability of her return being strongly urged by her friends, it was proposed to perform the journey under chloroform, and this was actually accomplished on Wednesday. The patient was anæsthetized on her bed in George Street, Hanover Square, having no knowledge of her impending journey. She was then carried down-stairs and placed in an invalid-carriage, driven to her home at Norwood, and taken out and carried up-stairs to her own bed, without at any time actually recognizing that she was on her way home. The journey occupied an hour and a half, and the patient was under chloroform about two hours.—*Lancet.*

Belgian Insane Asylums.—The Belgian Government has recently ordered securely-locked letter-boxes to be placed in all the insane asylums of the country, public or private, in positions where they will be easily accessible to all the inmates. They are designed to allow complaints and suggestions to be made to the authorities in a way independent of any of the officers or attendants. No one connected with the institution can have access to them. They are in charge of the *Procureur du Roi* of the district, and the letters they contain are taken to him weekly for examination. The complaints are then investigated, and, if any one claims to be sane, the case is ordered to be examined by medical experts. Abuses are corrected. The system, it is said, exerts a wholesome influence, and tends to secure proper management in all its details.—*New York Medical Record.*

Simple Method of testing Pepsin.—The *Lancet* gives the following rule for ascertaining whether this valuable medicine is of the standard quality:

Boil an egg for an hour, and cut a portion of the white into the thinest possible slices. Take a two-ounce wide-mouthed bottle and introduce into it 77 grains (5 grammes) of the sliced white of egg, 1½ grain of pepsin, 4 minims of strong hydrochloric acid, and 420 minims of distilled water. Place the bottle in a water-bath, and keep it for four hours at a temperature of 100° Fahr. A higher temperature (not exceeding 120° Fahr.) causes more rapid digestion; but it is, perhaps, better to work at about the temperature of the stomach. At the end of the experiment all the albumen should have been dissolved, nothing remaining but minute quantities of fibrous or membranous matters.

Specialties.—Dr. Robert Barnes says: "I have recently been honored by a visit from a lady of typical modern intelligence, who consulted me about a fibroid tumor of the uterus; and, lest I should stray beyond my business, she was careful to tell me that Dr. Brown-Séquard had charge of her nervous system; that Dr. Williams attended to her lungs; that her abdominal organs were intrusted to Sir William Gull; that Mr. Spencer Wells looked after her rectum; and that Dr. Walshe had her heart. If some adventurous doctor should determine to start a new specialty, and open an institution for the treatment of diseases of the umbilicus—the only region which, as my colleague Mr. Simon says, is unappropriated—I think I can promise him more than one patient."—*Lancet.*

Victims to Tigers and Snakes.—Lord Ettrick has done well to call the attention of the Government to the frightful sacrifice of human life in India—amounting to 4,000 annually—by tigers and snakes. A correspondent of the *Times* suggests strychnia for the tigers, which has been found so useful in clearing the Australian settlements of prairie-dogs. For snakes in India the offer of a sufficiently tempting reward is no doubt the best remedy. Dr. Fayrer, in the "Thanatophidia of India," proves that the natives will readily adopt snake-killing as a means of living if it be sufficiently paid. In the same work there are some valuable hints about the use of carbolic acid and tar in keeping deadly snakes at a distance.—*Medical Times and Gazette.*

Professional Risks.—We deeply regret to have to record the death of Dr. Pirrie, J. P., Consulting Physician of the Belfast General Hospital, and Master of the Belfast Lying-in Hospital. This eminent physician must be counted among those who have fallen victims to the dangers of professional life. His death was due to a wound by a spiculum of bone, which happened to him in performing the operation of craniotomy. Two eminent professional men in London—Mr. Erichsen and Dr. Braxton Hicks—are at this time suffering from severe illness, passing on now, however, happily to cure, arising from wounds incurred in operating.—*British Medical Journal*, August 9, 1873.

Medical Societies in Switzerland.—There are forty medical societies in Switzerland, including practitioners in all the cantons except Tessin and Wallis. The largest is the cantonal society of Zurich, with 149 members. One—the Oberaargau Medical Society—is more than a hundred years old; and five others have existed more than fifty years. About half of them hold twelve or more meetings in the year; the remainder meet less frequently—from one to seven times in the year. The cantonal society of Berne possessed a fund of 9,500 francs at the end of 1871; the subscriptions to the others vary from one to five francs yearly.—*London Medical Record.*

Prof. Rokitansky.—This distinguished ornament of the Vienna Medical School has announced to the Professoren-Collegium that next year he will have attained his seventieth year. According to the regulations he should then retire from his professorship, and be placed on the pension-list. It seems, however, that, seeing the great loss his retirement would inflict on the Vienna School—the founder of which he may be almost considered—an effort will be made to have his case regarded as an exceptional one as long as his present good health and teaching power continue.—*Medical Times and Gazette.*

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ART. I.—*Investigations on the Changes of the Blood in Yellow Fever.* By JOSEPH JONES, M. D., Professor of Chemistry and Clinical Medicine, Medical Department University of Louisiana, Visiting Physician of Charity Hospital.

CONSTITUTION AND CHANGES OF THE BLOOD IN YELLOW FEVER.

THAT the blood undergoes profound changes during the period of febrile excitement in yellow fever is manifest, even to the casual observer, in the impeded capillary circulation, purplish, jaundiced, and dusky hue of the surface, livid blotches, passive hæmorrhages from slight abrasions, leech-bites, blistered surfaces, and from the eyes, ears, mouth, gums, anus, gastro-intestinal mucous membrane, which, in severe cases, are characteristic of the succeeding period of calm or exhaustion

Although after the subsidence of the fever, at the end of from two to five days, the skin becomes cool and pleasant, the tongue shows a disposition to clean, and the tip and edges are less red, the thirst abates, and appetite for food returns, and the anxiety and morbid fear of death, which may have been great, subside, and both the patient and attendants may regard convalescence as established, nevertheless a careful examination will show that the circulating fluid has been altered during the preceding stage of febrile excitement; the eye loses its glistening appearance, and assumes a condition of "chronic" vascularity, of a dull orange-red; the flushed countenance gives way to a bloated appearance and dusky complexion; the sclerotic of the eye is jaundiced; the forehead presents a dusky appearance, which extends also over the neck and chest, the languor of the capillary circulation being indicated by the purple or lobster-red condition of the skin, and by the pale marks left by pressure over the forehead, chest, abdomen, or surface of the extremities; the matters vomited, which at first may be tinged with bile, change to clear acid mucous fluid, and then become discolored by small dark specks and flocculi of blood; the further changes in the blood are indicated by an increase of the purple or purplish-yellow suffusion of the surface, and by such a loss of vitality and of the fibrinous element, as manifests itself in the raw, claret-colored surface of blisters, in epistaxis, ecchymoses, bloody oozing from the mouth, ears, or anus, excoriation of the scrotum, the copious ejection of dark, altered blood in the state known as black vomit, from the stomach, with little or no apparent effort, copious stools of black, altered blood, and by foul *alkaline breath* containing *ammonia*.

It appears to be an error to treat of the changes of the blood, as confined to the latter stages of yellow fever, thus regarding the disease as manifesting only two grand stages, viz., that of reaction, irritation, and fever, and that of unhealthy subsidence or contamination, characterized most prominently by exhaustion of the nervous system, slow pulse, and passive hæmorrhages. The changes of the blood appear to be continuous from the time of the introduction of the poison to the fatal termination; the intensity of these changes being increased and their character being modified as the disease advances, not only by the direct action upon the constituents of the blood by the poison, but also by the addition of certain noxious substances, as *bile*, *urea*, *carbonate of ammonia*, sulphates, phosphates, and extractives, normally excreted in the urine, in consequence of the profound lesions induced by the poison in the liver and kidneys.

Certain constituents of the blood, as the albumen and fibrine, are not only altered physically and chemically in the early stages of yellow fever, but, as the disease advances, from the causes just specified, certain excrementitious matters, which in a state of health are continuously eliminated, accumulate in the circulatory fluid, and by their direct action upon the elements of the blood and upon the nervous system, and by their disturbing actions upon the processes of digestion and nutrition, still further alter the physical, chemical, and vital properties of this fluid.

As far as my observations extend, the alterations of the blood in yellow fever consist chiefly in—

1. Such an alteration of the chemical and physical properties of the fibrine and albumen as leads to the transudation of the latter through the excretory structures of the kidneys.

2. Various degrees of alteration and diminution of the fibrinous elements. In some cases of yellow fever there is an almost entire disappearance of the fibrine.

The disappearance of the fibrinous element appears to be due not so much to the action of ammonia, which is often present in the blood of yellow fever, but the direct action upon this element of the febrile poison.

From the alterations in the amount and character of the element, it results that the blood coagulates imperfectly in most cases, and the clot is voluminous and soft; the amount of serum formed is small, and, upon standing, the clot frequently dissolves, leaving a black, non-coagulable, grumous blood.

The blood taken from the cavities of the heart and large blood-vessels, after death, is frequently black and fluid; and, if, as is sometimes the case, fibrinous concretions are formed in the cavities of the heart, they are small, soft, and of a bright golden color, and much smaller in size and less firm than is usual in diseases attended, near the fatal issue, with similar retardation of the circulation, as in malarial fever.

In this latter disease, the formation of firm, light-colored hard clots is, as I have shown by a large number of observations, not only frequent, but they may actually cause death in certain cases of pernicious malarial fever.

3. While the colored blood-corpuscles are not especially diminished in yellow fever, they present under the microscope certain peculiar appearances which seem to be referable to the action of extraneous matters in the blood.

4. Increase of the extractive matters of the blood.

5. Increase of the fatty matters.

6. Accumulation of bile in the blood, in consequence of the profound lesions of the liver, induced by the febrile poison, and in consequence of the failure of the excretory function of the kidney.

The serum presents a golden color in yellow fever; this condition of the serum is due to the presence of bile, and may be present also in grave cases of paroxysmal malarial fever. If a drop of yellow-fever blood be allowed to fall upon a piece of bibulous paper, the centre will appear of a brilliant scarlet, while around the central accumulation of colored blood-corpuscles extends a ring of bright golden-colored serum.

Many of the changes of the blood, as well as certain cerebral symptoms, may be dependent upon the presence and action of the biliary constituents. Even the nausea and vomiting, as well as the depression of the pulse, and the nervous agitation, delirium, and coma, may to a certain extent be referred to the same cause.

7. Accumulation of the urinary constituents, and especially of the urea, and phosphoric acid, sulphuric acid, chloride of sodium, and carbonate of ammonia, in the blood, consequent upon the profound lesions induced by the febrile poison and its products upon the kidney.

Not only is the breath alkaline in many cases of yellow fever, but the blood contains ammonia, resulting from the decomposition of the urea, and the presence of which may be rendered evident by various means, as the addition of potash, soda, or lime, and in some cases the ammonia is so abundant as to be demonstrable without resorting to these reagents.

As the phosphoric and sulphuric acids are retained in the blood, when the function of the kidneys is embarrassed or suppressed, they unite with the ammonia and thus diminish the alkalinity of the blood, and render the addition of soda, potassa, or lime, necessary, in certain cases, for the demonstration of the ammonia.

The reaction of the yellow-fever blood is alkaline during life, but it rapidly changes in some cases to the acid reaction after death, from the rapidity of the putrefaction, and also from the rapid development in the blood, after death, in some cases of yellow fever, of various forms of low organization, and more especially of vibrios.

8. Rapid dissolution of the colored corpuscles, after the blood is abstracted from the body, either during life or after death. The rapid alteration of the investing membrane of the colored blood-corpuscles in the blood of yellow fever, after the abstraction of the blood from the vessels, appears to be intimately related to, if not absolutely dependent upon, the physical and chemical actions of the biliary and urinary constituents retained in the blood. During life the blood-corpuscles, in virtue, perhaps, of their vital endowments, and of their relations to the oxygen received during respiration, resist the solvent action of the bile, urea, and ammonia; but, after the blood is abstracted, and loses its vitality, and is exposed in vessels, these agents exert their characteristic actions.

It results also that, in many cases, the serum, separating from the clots, presents a bloody, florid color, not only from the incomplete separation of the colored corpuscles during the process of coagulation, but also from the dissolution of the globules and the escape of the coloring-matters of the blood. I have recently embraced the opportunity of testing the effects of human bile upon the blood-corpuscles. I selected for this inquiry the blood of the *Amphiuma means*, in which animal the colored globules are comparatively of great size. The bile rapidly dissolved the investing outer membranes and liberated the internal nuclei, which, under the more prolonged action of the bile, were in turn dissolved. I have shown, by a series of experiments with poisonous gases, and also with chemical reagents, more than sixteen years ago, that the blood-corpuscles in the amphidia, chelonia, and sauria, have a distinct cell-wall.

9. Rapid putrefaction of the blood of yellow fever, after its abstraction from the living body, or from the large vessels after death.

These conclusions have been established by careful and laborious observations at the bedside and in the laboratory; it would, however, expand the present article into a small volume to give the immediate details of the individual cases.

We shall, therefore, only present such outlines of a typical case as will serve to illustrate the preceding propositions:

CASE.—*Yellow Fever. Microscopical and Chemical Examination of Blood.*—John Alter, aged twenty-one years, native of Switzerland; has resided in Louisiana during the past four years; entered Charity Hospital, October 3, 1871, ten o'clock, A. M. Patient lethargic and dull, as if suffering under the effects of some narcotic poison; complains of pain over region of stomach, in the loins, and in the lower extremities; has a sleepy, heavy look; complexion yellow and dusky; conjunctiva of eyes, mucous membrane of lips and gums, and the skin generally, greatly congested; tongue furred in the centre and red on the borders; bowels constipated.

4th.—Patient passed a restless night; at the present time delirious and restless; ejects black-vomit from the mouth with little apparent effort. Complexion bright yellow, white of eyes yellow; skin greatly congested, extremities mottled; eyes congested; black-vomit and dark blood from the gums, trickling down the cheeks and neck from the corners of the mouth. Blood emits a disagreeable odor, similar to that of severe cases of small-pox, and typhus and typhoid fevers. Pulse full and slow; skin warm, dry, and harsh to the feeling. As is often the case in yellow fever, the pulse does not correspond with the temperature, nor with the gravity of the symptoms. In other diseases in which the patient, as in the present instance, is *in extremis*, and at the same time with a moderately elevated temperature, the pulse, instead of being full and slow, would be rapid and feeble.

Complete suppression of the urinary excretion during the past twenty-four hours.

Microscopical and Chemical Examination of Blood.—The color of the venous blood was purplish, between that of arterial and venous blood. When a drop of blood was allowed to fall upon a sheet of white, bibulous paper, a central bright-red spot remained, with a surrounding bright areola of serum. The blood coagulated very slowly, and formed a large, loose coagulum, which contracted slowly and imperfectly.

Thus, in a one-thousand-grain specific-gravity bottle, the coagulum filled the whole bottle, and from this amount of blood not more than one hundred and fifty grains of golden-colored serum could be collected at the end of forty-eight hours. The blood-corpuscles tended to rapid dissolution in the serum, and, upon standing, the serum changed from this cause to a bright-red. The reaction of the blood was carefully determined as it flowed from the vein, and found to be *alkaline*. I regarded this observation with interest, as, in several cases in which I had abstracted blood from the cavities of the heart, after death, it gave a decided acid reaction; but the present observation would seem to show that the acid reaction was due to *post-mortem* changes.

Immediately after its abstraction, the blood was subjected to a rigid microscopical examination.

Under a magnifying power of one-fifth of an inch (Smith & Beck, London), many of the blood-corpuscles presented an irregular, stellated outline. When received under high magnifying powers, as the one-eighteenth-inch immersion lens of G. and S. Merz, of Germany, with eye-glasses to magnify one thousand and fifty diameters, the crenated and stellated blood-corpuscles were found to be studded upon the surface, all over, with nodular, rounded projections. The colored blood-corpuscles appeared to be undergoing changes of form, as if irregular transudations of the globulin were forming upon the surface. These changes were most marked and frequent upon the surface and outer portions of the clots, and resembled, in some respects, the amœboid movements of the colorless corpuscles; the nodules, however, were uniformly diffused over the surface of the corpuscles.

When the blood was examined from the interior of the clot, the corpuscles were found conglomerated together, forming rolls or piles, adhering together by their flat surfaces, like the *roleaux* of the blood of inflammatory diseases, and of the horse. The corpuscles which had been joined and agglutinated together by their flat surfaces, were normal in shape, and presented no stellated or nodulated outline, as was the case with the corpuscles from the surface of the clot, and from the surrounding golden-colored serum. It appeared as if the exudation forming the nodules upon the free colored blood-corpuscles had formed the band of cement between the opposing surfaces.

Upon standing for twenty-four hours and longer, the colored corpuscles tended to dissolve and lose their outline, and the serum became colored from the escape of the coloring-matter of the red globules. The colored corpuscles appeared to be acted upon and altered by the urea and bile, which chemical analysis revealed in considerable amount in the serum.

After standing in an open beaker glass, or in porcelain capsules, for forty-eight hours, numerous fibres made their appearance, as in other putrefying animal fluids, as blood and albuminous urine and serous exudations. But no living animalcula, or vegetable cells, or sporules, or pigment-granules, were discovered, even after the most diligent search with high powers, ranging up to the one-twentieth of an inch objective, in the fresh blood.

The blood drawn from the arm during life putrefied much more slowly than that taken from the cavities of the heart and large blood-vessels after death.

The blood was carefully examined by the best and most reliable chemical methods for *urea*, and was found to contain a comparatively large amount of this constituent; large and well-formed crystals of *urea*, and of the *nitrate of urea*, were obtained from comparatively small quantities of blood.

As much urea was obtained from one hundred grains of the yellow-fever blood as is ordinarily obtained from seven thousand grains of healthy blood. In other words, the urea was about seventy times more abundant in the yellow-fever blood than in the normal, healthy blood.

The serum was also carefully tested for bile, and was found to contain both the coloring matter and the acids of bile. The blood also contained numerous small oil-globules, and in one of the specimens a distinct oily scum rested upon the surface of the clot. So striking was the oily appearance of the blood, that it was noticed by the medical and hospital students, who assisted during the bleeding.

The presence of the urea in increased amount, and of the bile in the blood, was due to the suppression or arrest of the functions of the kidneys and liver.

To the presence of these substances in the blood must be attributed, in part at least, the delirium, intoxication, and aberrated muscular and nervous power, and the slowness of the pulse, notwithstanding the elevation of temperature, and, to a certain extent also, the nausea, vomiting, gastro-intestinal irritation, and black-vomit.

The altered shape of the colored blood-corpuscles was certainly due, in a great measure, to the physical and chemical actions of the urea, urinary constituents, and bile of the serum.

Specific gravity of venous blood from the arm of this yellow-fever patient, 1055.6.

The density of this blood was somewhat below that assigned by physiologists and pathologists as the standard of healthy blood. Thus Becquerel and Rodier give the density of the defibrinated blood of the male, in health, as 1060, and of the female, as 1057.5.

The specific gravity of the serum of the venous blood from the arm of this yellow-fever patient was 1027. The specific gravity of the serum, therefore, did not differ materially from that of health; according to Becquerel and Rodier, the density of the serum of the male being 1028, and of the female 1027.4.

The serum was of a deep-yellow color, similar to the yellow color of the liver, and of the diluted bile from the gall-bladder of yellow-fever subjects.

Clot soft, large, and without any great contractile power.

After the contraction of the clot, the serum was tinged of a red color, from the presence of colored corpuscles, and the coloring-matter of the blood.

The amount of serum forced out of the clot was relatively small, and appeared to possess the power of dissolving the colored corpuscles upon standing in contact with the clot, and the red color increased gradually in depth. In these respects, the yellow-fever blood presented a marked contrast to healthy and inflammatory blood. Only one hundred and eight grains of serum could be obtained from a vessel containing eight hundred and ninety grains of blood: that is to say, by the contraction of the clot.

Fibrine in one thousand parts of venous blood abstracted from the arm of this yellow-fever patient, 0.271. *The fibrine* *was greatly diminished, being only one-tenth of the quantity present in normal blood.* The fibrine itself appeared to be of the usual tenacity, and the imperfect contraction of the clot appeared to depend rather upon the small amount of fibrine, than upon any physical or chemical change of this constituent of the blood. *In the marked diminution of the fibrine, we have an important explanation of the cause of the hæmorrhagic tendency in yellow fever:*

CHEMICAL CONSTITUTION OF YELLOW-FEVER BLOOD.

Specific gravity of blood	1055.6
Specific gravity of serum	1027.
Water in 1,000 parts of blood	802.12
Water in 1,000 parts of serum	922.90
Solid matters in 1,000 parts of blood	197.88
Solid matters in 1,000 parts of serum	77.10
Solid matters in serum of 1,000 parts of blood	67.03
Saline matters in 1,000 parts of blood	8.48
Saline matters in blood-corpuscles of 1,000 parts of blood	1.78
Saline matters in 1,000 parts of serum	7.71
Saline matters in serum of 1,000 parts of blood	6.69
Organic matters in 1,000 parts of blood	189.40
Organic matters in 1,000 parts of serum	69.39

1,000 *Parts of Blood contained—*

Water					802.12
Solid residue 197.88.	Organic matters 189.40. Fixed saline constituents, 8.48.	Dried blood-corpuscles, 130.57.		Organic matters	128.79
				Saline matters	1.78
		Solid matters of serum, 67.03.	Albumen 53.40.	Organic matters.	51.59
				Saline matters	1.81
			Extractive matters, 13.72.	Urea, carbonate of ammonia, bile, fat, etc.	8.84
				Inorganic matters	4.88
Fibrine					0.271

1,000 *Parts of Blood contained—*

Moist blood-corpuscles, 522.28.	Water of moist blood-corpuscles		392.71
	Organic matters of moist blood-corpuscles		128.79
	Saline matters " " "		1.78
Liquor sanguinis, 477.72.	Albumen 53.40.	Organic matters	51.59
		Saline matters	1.81
	Extractive matters, 13.72.	Urea, bile, fat, carbonate of ammonia, coloring-matters, etc.	8.84
		Inorganic matters	4.88
	Fibrine		0.271

The following are the chief characteristics of the blood in the stage of depression in yellow fever, as established by the preceding chemical analysis:

Specific gravity of blood and serum not specially altered. Blood coagulates slowly and imperfectly; clot voluminous and soft. Fibrine greatly deficient, and not more than one-tenth the normal amount. Reaction of blood alkaline. No deficiency of colored blood-corpuscles, the dried blood-corpuscles being 130.57, and the moist blood-corpuscles 522.28. The organic matters of the moist blood-corpuscles are normal in amount, while the fixed saline constituents are diminished, being only 1.78 in the blood-corpuscles of one thousand parts of blood.

The relation of the moist blood-corpuscles to the liquor sanguinis, as far as quantity was concerned, was not disturbed, the former standing in relation to the latter in one thousand parts, as 522.28 of the blood-corpuscles to 477.72 of the liquor sanguinis.

The albumen of the liquor sanguinis was diminished to a marked degree, being only 53.40 parts in one thousand parts of blood. The extractive matters of the liquor sanguinis were increased. The extractive matters were complex in their constitution, and included bile, urea, and carbonate of ammonia. The fixed saline constituents of the liquor sanguinis were not diminished.

Without doubt, the loss of albumen, as well as the presence of bile, urea, and other excrementitious matters in the serum, or liquor sanguinis, determines to a certain extent the capillary congestion, and the production of black-vomit.

The patient died twelve hours after the abstraction of blood from the arm.

The kidneys never acted, and the patient appeared to die from the combined action of the *febrile poison*, bile, urea, and other excrementitious matters, and the loss of blood during the slow but persistent hæmorrhage from the gastro-intestinal mucous membrane.

Autopsy Twelve Hours after Death. Exterior.—Superior portions of face, and trunk, and upper portions of limbs, of a deep, golden-orange color. The lower dependent portions of the face, and of the trunk and limbs, were of a mottled purplish yellow, and livid maculated appearance, as if the patient had been beaten with a club. The general appearance of the exterior of the body was horrible. Black-vomit had run out of the corners of the mouth, and saturated the winding-sheet, and had also trickled down in a muddy, filthy stream along the sides of the face and neck. Features full, and somewhat swollen; belly full and tympanitic. Well-formed, muscular man, in the full vigor and strength of manhood. Large, well-developed chest, with full pectoral muscles. Arms full and round, with good muscular development. The patient appeared to have been cut off in the full vigor of health, and in death resembled one into whose veins a deadly poison had been injected by a venomous reptile, which had not only poisoned, but also enveloped and strangled its victim in its powerful coils.

Head.—Dura mater, pia mater, and arachnoid membranes, congested with blood. The brain was congested with blood, not only in its membranes, but also throughout its textures. The brain and its membranes, however, presented no marks of inflammation and no exudation. Membranes of spinal cord congested with blood. The congestion of the blood-vessels of the brain appeared to be similar in all respects to that of the capillaries and small blood-vessels in the different organs and tissues. The consistence of the brain was normal. Weight of brain, two pounds, fourteen ounces (forty-two ounces Troy).

The brain was carefully tested for bile and urea. The infusion of the structures of the brain presented a bright-golden color, like that of the serum. When carefully tested, the presence of the coloring-matter and acids of the bile was conclusively determined in the cerebral structures. When the decoction of the brain was evaporated in a watch-glass, and examined under the microscope, numerous beautiful stellated and prismatic crystals of the phosphates of lime, ammonia, and magnesia, made their appearance.

When carefully tested for urea, according to the best methods known to chemists, the alcoholic extract obtained from the watery extract was found to be literally loaded with urea, and as large a crop of perfectly-formed and characteristic crystals of the nitrate of urea were obtained as from an ordinary specimen of urine of moderate specific gravity.

The brain contained relatively more urea than any other organ, the liver not excepted.

It was clearly established, by this examination, that the urea existed in much larger quantity than in the healthy brain, or in the brains of those who die from diseases in which the action of the kidneys is not diminished.

Thorax.—The *pericardium* was congested. As is usual in yellow fever, the capillaries and small blood-vessels of the pericardium presented a beautiful arborescent appearance, from the accumulation of colored blood-corpuscles. I have in my possession a portion of the pericardium of a yellow-fever patient, which I preserved by simply spreading upon a glass slide, and, after drying, saturating with Canada balsam, and covering with a glass slide. This preparation shows an intense congestion of the blood-vessels and capillaries, and so numerous are the colored corpuscles, and so brilliant the colors, that the preparation resembles the best injections with the most brilliant carmine.

The *pericardial sac* contained about two ounces of bright, golden-colored, transparent serum.

The *heart* presented a brownish-yellow appearance, resembling the pale, flabby heart of scurvy. The textures, although softer than in the normal heart, were, however, firmer than in the well-marked fatty degeneration. The muscular textures of the heart required considerable pounding in the mortar to reduce them to fragments sufficiently small for decoction.

The decoction of the heart in distilled water was loaded with golden-colored oil, which floated in a thick scum upon the surface; and it resembled, in its rich, oily nature, the richest soup made from the marrow and fat of the bones of fat and well-fed animals.

The fat was far more abundant than is usual in the heart of malarial fever or of other diseases, in which there was no fatty degeneration of this organ. The filtered decoction of the heart was of a golden-yellow color. The decoction of the heart contained bile in abundance. As the decoction of the heart, after careful filtration, slowly evaporated in a porcelain capsule, a deep, orange-colored ring formed around the sides of the vessel. Weight of the heart eight and a half ounces. Both cavities of the heart contained blood. Several small, ropy, golden-yellow clots were also discovered in the cavities of the heart. The muscular tissue of the heart appeared to have lost its tenacity, and to have become relaxed and somewhat softened; and this view was confirmed by microscopical examination.

The heart was also carefully tested for *urea*, and this substance was clearly detected in considerable quantity, but in relatively less amount than in the brain.

Under the microscope oil was found in the form of minute globules, diffused through all the tissues of the heart, and even within the ultimate muscular fibres. The muscular fibres of the heart presented, under the microscope, a granular appearance, and the transverse striæ were not so distinct as in normal hearts. The increase of free fat or oil in the structures of the heart was, therefore, determined by the microscope and by actual experiment.

The heart contained, therefore, in comparatively large and abnormal amounts, bile, urea, and oil. No animalcula, or vegetable cells, or sporules, were observed under the $\frac{1}{18}$th-inch immersion objective of Merz, either in the blood or in the texture of the heart.

Lungs.—The lungs in the dependent portions were greatly congested with blood, and presented a mottled, purplish, and red appearance. The lower portions of the lungs, when cut, resembled the congested lungs of pneumonia, and, in circumscribed portions, effusions of blood had taken place. The muscular structure of the thorax, when cut and exposed to the atmosphere, presented a brilliant scarlet hue, like those of patients poisoned with cyanide of potassium.

Abdominal Cavity, Alimentary Canal.—Exterior surface of stomach somewhat congested. Internal mucous membrane of a deep-purplish or brownish-purple and red color, with variations in the depth of the color, presenting a mottled appearance. Under low magnifying powers, suitable for the examination of the mucous membrane of the stomach, by direct light, an intense congestion of the capillaries and small blood-vessels was observed.

In some places, the epithelium of the mucous membrane of the stomach had been removed, and the capillaries were exposed and ruptured, and from the point of rupture issued small flakes of coagulated blood, resembling those so frequently found in black-vomit.

The epithelial cells of the mucous membrane were detected in large numbers; they could also be removed readily by slight and delicate scraping with a spatula.

Black-Vomit.—The stomach contained one pint of black vomit, of a dark, purplish color, resembling in all respects defibrinated and altered blood. Under the microscope, the black-vomit was found to contain numerous colored blood-corpuscles, variously altered, also cells from the mucous membrane of the stomach, and also broken capillaries.

In this case the black-vomit resembled in all respects blood which had been defibrinated, and mixed with gastric juice and a mucoid fluid.

This specimen of black-vomit, taken from the stomach, twelve hours after death, contained some fibres, and the sporules and thallus of a plant, resembling the yeast-plant. The yeast-plant appears to be most abundanti n the acid black-vomit of life, and appears to be dependent in large measure for its rapid development upon the articles of food consumed. If much sugar be introduced into the stomach with the food, the growth of this plant is rapid in a stomach which has lost its muscular and digestive powers to a great extent, as in yellow fever. The sporules of this and other related plants of simple organization appear to be ever present in the atmosphere, and they increase rapidly whenever the proper conditions, as in the disordered stomach of yellow fever, with its albuminoid contents, exist for their growth and development. The same remark applies to the fibres which I have found to be abundant in the black-vomit during life and after death, and in the blood, after death, in yellow fever.

It is not probable that, *per se*, that is, in and of themselves, in their natural and uncomplicated and uncontaminated state, as developed in innocuous fluids, these low organisms are the cause of yellow fever; but they may become active agents in the dissemination of the peculiar *animal poison* which we believe to be the veritable *cause* of the disease. When, under certain circumstances, as the crowding of human beings upon filthy ships or in houses in tropical and subtropical regions, that form of poisonous animal matter is engendered which is capable of exciting those changes in the blood and organs, attended with elevation of temperature, aberrated nervous and muscular actions, and derangements of nutrition and secretion, which we know under the general name of yellow fever, these lower organizations, finding a lodgment in the human body thus affected, and developing in the poisoned fluids, may, in virtue of their assimilation and appropriation of the peculiar animal poison, become the active agents in the dissemination of the disease. In a similar manner the poison of hospital gangrene may be communicated to all the wounded of a large hospital; even the flies swarming over the gangrenous wounds may convey the poisonous matter. If plants of simple organization as well as animalcula were capable *per se* of engendering yellow fever, there is no known reason why the disease should not arise *de novo*, in every city and in all parts of the country in which a certain combination of heat and moisture exists. In like manner it would be impossible to account for the remarkable fact that, as a general rule, yellow fever attacks the same individual but once in a lifetime. It is well known that those who have suffered from the disease may nurse any number of patients, sleeping in the most infected localities, and passing unharmed through the severest and most devastating epidemics. All the facts in this complicated problem appear to be explained by the theory that the disease is produced by an animal poison or product of the human body under certain circumstances, which has defined chemical relations to the blood and organs, inducing a distinct cycle of changes, and defined chemical and physical alterations of the solids and fluids, which are as permanent and lasting as those resulting from the action of the small-pox poison.

According to this view, the poison of yellow fever may be directly communicated, or it may be communicated by the agency of simple plants and animalcula; and not one but many species of these simpler forms of vegetable and animal organisms may become active agents in the spread of the disease.

The odor of this specimen of black-vomit was putrid and disgusting, resembling that of decomposing blood.

When heated upon the sand-bath and slowly evaporated, the odor emitted was very disgusting and overpowering, and excited nausea.

Specific gravity of black-vomit, 1026.

Reaction of black-vomit, *alkaline.*

The surface of the mucous membrane of the stomach, as well as the black-vomit itself, emitted strong fumes of ammonia, in the form of free ammonia. Both free ammonia and the carbonate and the sulphide of ammonia were present in the black-vomit. When a glass rod was dipped in strong hydrochloric acid, and held over the mucous membrane of the stomach, and over the black-vomit, heavy, dense fumes of chloride of ammonium were evolved.

The alkaline character of the black-vomit was evidently due to the decomposition of the urea, and its elimination, as ammonia and carbonate of ammonia, by the gastric mucous membrane.

The black-vomit was carefully tested for *urea*, and yielded this substance in considerable amount, as well as ammonia and the carbonate of ammonia and sulphide of ammonia.

Analysis of Black-Vomit.—Reaction of black-vomit, alkaline. Alkaline reaction of black-vomit dependent upon *ammonia.*

In the presence of hydrochloric acid, black-vomit emits heavy fumes of chloride of ammonia.

Specific gravity of black-vomit.............................. 1026

1,000 parts *of black-vomit contained*—

Water				906.00
Solid residuum, 94.00.	Organic matters, 85.40. Saline matters, 8.60.	Albumen, colored blood-corpuscles, mucus-corpuscles, epithelial cells, and broken capillaries, 77.14.	Organic matters	75.46
			Saline matters..	1.68
		Extractive matters, *urea*, *ammonia*, oil, etc., 16.86.	Urea, ammonia, and fatty matters.........	9.94
			Saline matters.	6.92

Still further to confirm the existence of blood in the black-vomit, the ash derived from careful incineration was tested for iron, and was found to contain this substance in amount equal to that which would be found in about seventy grains of blood.

Microscopical and Chemical Examination of Blood from

Cavities of the Heart.—The blood from the cavities of the heart contained several loose, golden-colored clots, or fibrinous concretions.

The blood was fluid, and did not coagulate upon standing.

The odor of the blood, twelve hours after death, was putrid, but not so disagreeable as the black-vomit taken from the stomach after death.

The colored blood-corpuscles were crenated and altered in form, in some instances; many of the corpuscles, however, presented the usual appearance, while others were round and distended.

The blood of the cavities of the heart, and from the large blood-vessels, contained numerous *fibres.*

In twelve hours after death the blood manifested, even within the heart itself, the presence of numerous living, active, vibrating animalcules.

Upon standing, these increased in numbers. They were also, as we have just seen, present in considerable numbers in the black-vomit of the stomach.

These fibres must have been formed or originated in the following ways:

1. They existed in the blood before death, being received through the lungs.

We cannot adopt this view, because they were entirely absent from the fresh blood drawn and examined during the life of the patient.

2. They arose spontaneously in the blood after death, as a result of the putrefactive process. The adoption of this view would involve the theory of *spontaneous generation.* Experiments have not yet settled definitely the exact temperature at which fibres are destroyed, nor the exact length of time to which organic fluids must be subjected to certain degrees of heat to accomplish the complete destruction of the germs of the lower organisms. The results of my own investigations, as well as the weight of testimony, however, are adverse to the theory of spontaneous generation.

3. They penetrated from the stomach into the blood, finding ample space for entrance through the broken capillaries, and through the eroded surface of the gastric mucous membrane.

4. The germs of the fibres existed in the tissues during life, and even in a state of profound health. They were prevented from germinating by the chemical changes (compositions and decompositions) characteristic of health. After death they multiplied rapidly and found a ready entrance from the tissues into the blood-vessel system, through the "*pores*" of the capillaries and small veins described by Cohnheim. These so-called *stomata* vary in size from $\frac{1}{4000}$ to $\frac{1}{10000}$ of an inch in diameter; and, if it be true that they are really openings or pores in the small veins, we have an explanation of the mode in which the minute fibres might readily find entrance into the blood from the surrounding tissues.

The surface of the blood abstracted from the cavities of the heart presented an oily appearance, and the microscope revealed the presence of minute oil-globules.

When a drop of the blood was allowed to fall upon a piece of white filtering-paper, the centre presented a bright-red appearance, from the presence of colored corpuscles, while the central colored spot was surrounded by a bright-red golden-colored border. The reaction of the blood from the cavities of the heart was *acid*.

Chemical analysis of the blood revealed similar results to those obtained during life: thus the colored blood-corpuscles were normal in amount; fibrine greatly diminished, and in fact entirely absent; bile and urea present in large amount.

The fact that the fibrine was diminished, even in the acid blood, would establish the fact that the diminution of this element in the yellow-fever blood was real and not apparent. It would also tend to establish the fact that the diminution of the fibrine was only dependent upon the solvent action of the increased amount of ammonia in the blood.

The acid reaction of the blood may have been the result of *post-mortem* changes, and may have been induced, in part at least, by the vibrios. The acid reaction may also have depended, to a certain extent, upon the retention of phosphoric and sulphuric acids and acid phosphates in the blood, in consequence of the arrest of the action of the kidneys.

The brilliant scarlet color of the blood, upon exposure to the atmosphere, and of the muscles of the thorax, without such exposure, may be due to the presence of urea, and phosphoric acid, and acid phosphates, the accumulation of which in the blood was dependent upon the arrest of the function of the kidneys.

To the same cause, that is, the cessation of the action of the kidneys, must be referred the remarkable bloodiness of the tissues; the watery element and excrementitious materials not being continuously removed by the kidneys, the blood-vessels became, in consequence, filled and distended with the altered blood.

The passive hæmorrhages observed in the various organs, stomach, lungs, and even into the muscular structures, must be referred to the destruction of the fibrine of the blood, and to the great distention of the blood-vessels, in virtue of the cessation of the action of the kidneys, liver, and stomach. It results from the same causes, viz., the fluid character of the blood, and the great distention of the blood-vessel system with an abnormal amount of altered blood, so that, when a canula is plunged into and through the walls of the heart of a yellow-fever subject, even hours after death, the blood will flow in a continuous stream through the canula, and pints may thus be drawn off.

Spleen.—Somewhat enlarged and softened. Weight, ten ounces. Splenic fluid and blood changed readily and rapidly to the arterial hue when exposed to the oxygen of the atmosphere.

Under the microscope the splenic fluid was found to consist of altered red corpuscles, granular masses, and numerous oil-globules.

The decoction of the spleen presented a brownish, purplish, reddish-mahogany hue, quite different from the golden hue of the decoction of the heart and liver.

Upon chemical analysis, the spleen was found to contain both *bile* and *urea.*

Liver.—The liver presented a yellow and brownish-yellow appearance.

The portal system of capillaries was congested with blood.

A few small, slate-colored spots were observed upon the surface of the liver.

The structures of the liver were firm, and appeared to be firmer than in health; considerable force was required in mashing the structures of the liver in the Wedgwood mortar, previous to analysis.

Upon analysis, the liver yielded, in considerable amount, hepatic or animal starch, grape or hepatic sugar, and urea.

The decoction of the liver yielded urea to a less amount than the decoction of the brain.

Under the microscope, the liver was found to be loaded with oil-globules.

The liver-cells contained numerous oil-globules, and many of the cells were greatly distended with yellow oil.

The oil-globules were also deposited within the meshes of the fibrous tissue of the liver.

Owing to the large amount of oil present, within and around the liver-cells, they were indistinct in their outlines.

The color of the liver, especially within, upon the cut surfaces, was that characteristic of yellow fever; and the consistence of the organ was, as is usually the case in this disease, increased. It appears that albuminoid or fibroid granular matter transudes through the blood-vessels of the liver, as well as through those of the kidney.

It is probable that the peculiar alteration of the liver in yellow fever causes obstruction to the free flow of blood through the portal and hepatic capillaries, and in such obstruction we may find an explanation of the congested portal circulation, and of the gastro-intestinal mucous membrane. And in such lesions of the liver we may discover one of the causes of the hæmorrhages from the gastro-intestinal mucous membrane, or, at least, a favorable condition to its establishment.

Gall-bladder.—Contracted. The gall-bladder contained only one hundred and twenty grains of yellow bile.

Bile.—Specific gravity of the bile from the gall-bladder, 1040.

The bile presented a deep, greenish-yellow hue; was thick and grumous, and under the microscope was found to contain numerous cells of the mucous membrane of the gall-bladder.

Mucous membrane of gall-bladder deeply congested, and at the same time discolored by bile.

When viewed *en masse*, the bile presented a greenish-black color.

The bile was highly concentrated, two or three drops being sufficient to change to a golden color half a gallon or more of water.

As is usual in yellow fever, the amount of bile in the gall-bladder was small, only one hundred and twenty grains being obtained, although the whole amount was carefully collected and weighed.

This diminution of bile appears to be characteristic of yellow fever; the gall-bladder, as a general rule, is small and contracted, and contains a small amount of bile, rarely exceeding one hundred and fifty grains, and often not reaching ninety grains.

In intermittent, remittent, pernicious, and hæmaturial malarial fever, on the other hand, and also in typhoid fever, the bile is more abundant, and, as a general rule, the gall-bladder is distended with bile, which generally in these diseases amounts to more than one thousand grains. In a word, the bile found in the gall-bladder, after death from the various forms of malarial fever, is ten times more abundant than in yellow fever.

In yellow fever, bile is also absent from the intestinal canal, and it would appear from these facts, as well as from the jaundice of yellow fever, that in this disease there is an occlusion of the hepatic ducts, in a manner similar to the occlusion of the excretory ducts or tubes of the kidneys.

Results of Chemical Examination of Yellow-Fever Bile.—Specific gravity of bile, 1040.

The specific gravity of the bile was above that of the serum of the blood, which we have shown to have been 1027; and that of the blood 1055.6. Heat produced no coagulation in the bile. The proper reagents did not separate any crystalline constituents from the bile.

Solid residue in one hundred and twenty grains of bile, being the whole amount contained in the gall-bladder, grains 15.66.

Solid residue in 100 parts of bile, 13.05; solid residue calculated for 1,000 parts of bile, 130.50; water calculated for 1,000 parts of bile, 869.50.

Kidneys.—Weight of kidneys, ten ounces.

Kidneys congested on the exterior, more especially in the cortical portion, but of a more decided yellow color than the kidneys of health.

When sections were made, the kidneys presented a yellowish color, resembling kidneys undergoing fatty degeneration.

The kidneys, with the exception of a few circumscribed, small, slate-colored spots upon the exterior, presented an appearance and color similar to that of the heart and liver.

Under the microscope, the excretory cells and tubuli uriniferi of the kidney were found to be loaded with oil-globules, and granular, fibroid, and albuminoid matter.

The oil-globules were diffused through the excretory cells, tubuli uriniferi, Malpighian corpuscles, and fibrous textures of the kidney.

The arrest of the urinary excretion appeared, after prolonged and careful microscopical examination of sections of the kidney with Valentin's knife, to have been due to the filling up of the Malpighian corpuscles, and tubuli uriniferi and excretory cells, with oil-globules, and granular, albuminoid, or fibroid matter; and also to the stagnation and conglomeration of the colored blood-corpuscles in the delicate capillaries of the kidneys.

The capillaries of the kidney were filled with colored blood-corpuscles.

The bladder contained no urine, and it was evident that the patient had not excreted any urine during the last forty-eight hours of life, and many of the symptoms during life were without doubt due to this arrest of urinary secretion.

We have thus presented the results of the laborious and careful investigation of this case, which required my undivided attention during the entire period in which it was under observation, to the exclusion of all other business, and of all interruption, with the exception of a few hours devoted to sleep and meals, not exceeding seven hours each day, the remaining seventeen being devoted to this investigation, in order that a true picture might be presented of the relations of the changes of the blood to those of the various organs. Each case studied in this manner becomes a living exponent and demonstration of the nature of the disease, just as the description of one animal will, to a great extent, serve as the accurate description of the entire species to which it belongs.

Art. II.—*Facts and Theories about the Recent Outbreak of Asiatic Cholera.* By John C. Peters, M. D., of New York.

By a true theory we mean a legitimate deduction from facts, not contradicted by equally numerous and well-substantiated facts. An hypothesis is a very different thing.

We all know how the great outbreak of cholera, in 1865, was carried from Alexandria, in Egypt, by steamships to all parts of Europe, and notably to the Black-Sea ports of Russia, and thence over the whole Russian Empire. Next came the pestilence at Hurdwar, in Northern India, in 1867, which was carried through Northern Persia to the Caspian Sea, and thence across to Russia. Then came the virulent epidemic of 1869 in the Punjab, or extreme northwestern province of India, which was also carried through Northern Persia to Astrabad, a port on the southeastern corner of the Caspian Sea, and from there again over to Russia. These successive outbreaks in Persia and Russia have led to the belief by Dr. Tholazon, of Persia, and Dr. Pelikan, of Russia, that cholera had become naturalized in these two countries. But the annual reports of the sanitary commissioner with the government of India, especially that of 1869 (*see* p. 220), prove the above facts. Inspector-General Murray has also established the former in opposition to the latter views. The most interesting and important town in Northern Persia, in connection with conveyance of cholera to Europe, is the holy city of Meshed, situated about two-thirds of the way from India toward the Caspian Sea. This city is so holy that no person of any sect called Mohammedan has ever dared to commit the impiety of firing a hostile shot at its walls. For eight months in the year all the roads to and from Meshed are thronged with pilgrims. It is calculated that nearly sixty thousand come up from India, Cabool, and Afghanistan, often bringing cholera with them; and an equal number coming from Turkey in Asia, and the countries between the Black and Caspian Seas, frequently carry it back with them. It is not a little singular that, among the first towns attacked in Russia, in 1870 or '71, was the holy city of Kiev, on the right bank of the Dnieper, in the southwestern portion of Russia, about one hundred miles north of Odessa, on the Black Sea, and four hundred miles southwest of Moscow. Out of a population of seventy thousand it was losing nearer one hundred than fifty a day from cholera, when almost all the rest of Russia was free from it. About fifty thousand pilgrims come to Kiev every year to visit the relics of the one hundred and ten martyrs to the old Russian faith. It is adorned with a large number of magnificent churches, the great cathedral of St. Sophia, and the palace of the Greek metropolitan. The glittering gilt, green, and varied-colored cupolas on the numerous eminences present a magnificent spectacle from a distance. It is the port and capital of the Ukraine, and is near Poland, Galicia, and Moldavia. It has been the capital of the princes of Novgorod since the ninth century, and Panslavic patriots still look to it as their natural capital. It is magnificent but filthy. The drains, privy-vaults, and out-houses of Kiev are in the most primitive and disgusting condition, and on every hot day a shocking odor ascends from that otherwise glorious town. A distinguished architect once boasted that he had built a thousand houses in Kiev but not one water-closet. It always requires as much sanitary inspection as Meshed or Mecca. The mortality in 1871 among the pilgrims and in the monasteries was very great. From Kiev cholera spread easily to Poland and down the river Vistula to the Baltic. Last year it had obtained a lodgment not only in Hungary and Poland, but in the Baltic towns of Königsberg, Elbing, Dantzic, Stettin, and also in Hamburg and Bremen. When cholera commenced in New Orleans, on February 9, 1873, of course the steamers from Northern Germany, which touch at Havre, were first suspected, especially as the first death from cholera in New Orleans was that of a Prussian, aged fifty-six, and the next that of a Frenchman.[1] But so many rumors were raised about vessels from Odessa, the Mediterranean, and the Baltic, that attention was completely diverted from the North-Sea steamers. But the similarity to the outbreak in 1848 and '49 was too great to pass unnoticed. In 1848 the ship Guttemberg sailed from Hamburg, where cholera had prevailed from September 7th, with two hundred and fifty steerage passengers; had several deaths from cholera while still in the Elbe, and arrived at New Orleans on December 6th, after a passage of fifty-five days. She had no more deaths from cholera, but some from diarrhœa and dysentery, and doubtless had infected clothing on board. 2. The bark Callao, from Bremen, with one hundred and fifty emigrants, had eighteen deaths from cholera, the last one on November 8th, and arrived at New Orleans on December 8th, doubtless also with infected articles on board. 3. The ship Swanton, from Havre, had seventeen deaths from cholera, arrived at New Orleans on December 11, 1848, and on the 12th a woman was carried from her to the Charity Hospital in a state of complete cholera-collapse. One case was traced to the Guttemberg, five or six others to passengers from the ship Swanton, who had not been subjected to quarantine, but had scattered all over the city. Cholera commenced in December, 1848, in New Orleans, almost immediately after the arrival of the Swanton, which is quite unusual in large cities, in which the commencement of an epidemic of cholera is generally very slow. It was suspected, but never could be proved, that other cholera vessels had arrived previous to the Guttemberg, Callao, and Swanton. For, it may be assumed as a fact, when cholera breaks out suddenly and violently in a large town, that many cases of choleraic diarrhœa, cholerine, choleraic cholera-morbus, have been overlooked. It was decided as early as 1848 and '49, in England, that "the popular notion that cholera is sudden in its invasions of large towns or districts is as unfounded as the formerly prevalent opinion that it is always sudden in its attack in individuals."

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[1] These proved to be old residents.

In 1848 and 1849 in London, Edinburgh, Glasgow, Plymouth, Dundee, Bristol, Liverpool, Hull, and almost every large city in Great Britain in which the first cases were accurately observed, the initial case or cases preceded the others by from one to several weeks (*see* Dr. Sutherland's report to Parliament, pages 13–17). The first attacks were isolated, and occurred at considerable distances as to place, and intervals as to time. This mode of outbreak may be regarded as one of the laws of an epidemic of cholera. As the disease is generally brought by steerage-passengers, immigrants, and the poorer class of travelers, the initial cases in large towns generally occur in the low haunts and outskirts. They are widely separated, as if springing from distinct sources of infection, and often occur among old inhabitants, because clothing or fomites have been brought to them, or because they have visited or been visited by some one with choleraic diarrhœa, or cholerine. However this may be, the New Orleans authorities have not yet succeeded in tracing the direct importation of the disease. "From December 1, 1872, to May 1, 1873, no vessel from Odessa, or any other port on the Black Sea, came to New Orleans. From January 1 to May 1, 1873, no vessel from the Baltic came to New Orleans. In January, 1873, *passengers* arrived only from Hamburg, Bremen, and Liverpool. In February only from Bremen, Port Simon, and Liverpool. In March, from Hamburg, Liverpool, Palermo, Bremen, and Mexico. In April, only from Liverpool, Bremen, Hamburg, and Port Simon. It is claimed that none of these vessels, or any other, had deaths or sickness from cholera. Only two sailors were attacked with cholera, and only one died. Both were from the British ship Belgravia, which had no passengers, was some fifty days on the voyage, and they were taken ill ten days at least after arrival, when Asiatic cholera was already prevailing, viz., about April 14th and 16th. As the disease was admitted to be Asiatic cholera, and of course was imported in some way, we may have to adopt Prof. Austin Flint's opinion ("Practice of Medicine," fourth edition, p. 499): "There can be little or no doubt that the special cause" (of cholera) "may be transported in clothing and other substances after the manner of fomites. In other words, the disease is portable, without being contagious or infectious." As the first fatal case (the initial cases are not always fatal) occurred on February 9th, we must suspect vessels from Hamburg, Bremen, Port Simon, or Liverpool. As the outbreak commenced with twelve cases in the week ending April 6th, we may suspect vessels from Hamburg, Liverpool, Palermo, Bremen, or Mexico, as bringing the fomites of the disease. As there was more cholera in Hamburg last year than in any other of these places, that is the most probable starting-point, although many emigrants from Central Europe, where cholera was prevailing, also came to Bremen and perhaps to Palermo. The above facts accord with the mode of introduction of cholera into New Orleans in 1848, when vessels from Hamburg, Bremen, and Havre, brought the disease, and the ship Swanton from Havre became infected by German immigrants before there was any cholera in Havre. At that time chests of infected clothing from Pesth, in Hungary, were more than suspected, almost proved to have brought the disease. According to the latest accounts, there have been no less than one hundred and four thousand deaths from cholera in Hungary this year, up to September 1, 1873, and there were many thousands in 1872, not only in Hungary, but in Poland, Prussia, and notably in the cities of Warsaw, Königsberg, Elbing, Dantzic, Stettin, Dresden, Leipsic, Hamburg, and other places near the Baltic, and North Sea, or German Ocean.

It is very singular that cholera did not seem to spread down into Texas this year, but appeared to be carried by rail and steamboat to Mobile, Memphis, Nashville, Cincinnati, and many other places.

In Nashville, the mortuary lists are kept by the undertakers only; no cases are reported during life, and generally only twenty-four or more hours after death. Of the first one hundred fatal cases, only twelve or fifteen have been hunted up. According to Dr. Bowling, editor of the *Nashville Journal of Medicine and Surgery*, August, 1873, No. 1, p. 87, Mary Payne, colored, who lived near Wilson's Spring Branch, was the first fatal case; she seems to have been a washer-woman, as she *washed* all day on Wednesday, May 28th, and then was seized at night and died in eight hours. Mrs. Patterson, who had been with Mary Payne, was the next victim. J. McKisic, who had been with Mrs. Patterson in her sickness, and lived near her, was the third; and a colored man, at the same house, was the fourth fatal case in succession. Mrs. Murray and family moved away from Wilson's Spring Branch after the death of Mary Payne, and a few days after she and her two sons occupied the same grave. Here are seven correlated cases in succession. The negro villages on the highlands and lowlands outside of the city suffered most severely. Dr. Poynor describes these villages as dense aggregations of little huts, with eight, ten, and frequently more persons crowded into one miserable little hovel. Any cleanly and sanitary precautions about these huts were never dreamed of. Excrement of every character was deposited in, between, and around the shanties. The mortality, of course, was very large, while the cleanest and best parts of Nashville generally escaped, as did Edgefield, a large town just across the Cumberland River.

The panic in Nashville was very great, and fugitives spread the disease all over the country, especially to the railroad-stations to the north. The outbreak in Franklin, Kentucky, has been best observed by Dr. Charles N. Edwards, of that place. He says: "The first well-marked case was that of Mr. H., a citizen of Franklin, who had been employed in Gallatin, Tenn. (just north of Nashville), while cholera prevailed there. He was brought home sick with cholera on June 14th, and was attended by Dr. F. The first fatal case was Mr. G. R., who had also been in Gallatin. Dr. F. was the third case, but recovered; next his child died of cholera; then his washer-woman was, at a distant house, seized, but recovered; then her daughter, who lived with her, died, and her two children."

Louisville escaped, as usual. In Cincinnati a lady arrived about June 1st, from Nashville, nearly died of cholera, and then went on to Wheeling, West Virginia. One or more infected steamboats arrived from New Orleans and Memphis, and some of the most distinguished physicians of Cincinnati, those of the highest social and professional standing, informed me that cases could be traced to these vessels. In some of the hospitals which I visited, no record was kept of the names of the boats, streets, or numbers of the houses, from which the cases came. The first fairly-recognized fatal case occurred on June 14th. The majority of the well-educated physicians of Cincinnati regarded the disease as true imported Asiatic cholera. The newspapers and health authorities regarded it as indigenous, as purely local in its character, and caused principally by imprudences in diet. It was not regarded as communicable in any way; none but fatal cases were reported, and then only from one to two days after death. The city authorities gave very little assistance to physicians in their struggle with the disease. Disinfectants were very imperfectly employed. The general sanitary measures were reasonably good. Many of the fatal cases were reported in the newspapers, after June 14th, with name, residence, and duration of attack. The highest number of reported deaths on one day was seventeen, on June 28th. Then the disease persisted obstinately as a pure house epidemic nearly to September. There were many mild cases, and from two to four or more fatal cases a day. It spread from families to friends, until the disease was finally scattered or sprinkled thinly all over the city.

Cholera lingered in Cincinnati longer than in any other Northern city. And it always seemed, if Dr. Budd, of Bristol, and his efficient aid, Dr. Davies, had been there, the epidemic could have been stamped out in a week or two. In Dayton, Columbus, Indianapolis, Pittsburg, Wheeling, Chicago, and other places, active sanitary measures quickly checked the outbreaks.

Chattanooga, Lebanon, and other places, received the disease from Nashville (*see Nashville Journal of Medicine and Surgery*, October, 1873, pages 193 and 194, and 211). The history of cholera at Lancaster, Kentucky, described by Drs. Berry and Wilson (*see American Practitioner*, October, 1873, pages 103 to 197), is the best record of an outbreak yet published. The first case was imported from Jonesboro, Tenn., where cholera was prevailing, but did not prove fatal until two others contracted from it had succumbed. Of forty cases, only seven recovered. All were traced to communication, or to the rise of water from Tate's Well, contaminated by discharges from the first and other cases. The North-German steamers have lately brought cholera to Havre, and from there it has been carried up to Paris.

Clinical Records from Private and Hospital Practice.

I.—*Cerebro-Spinal Meningitis.* By George D. Bleything, M. D., New York.

Anne F., aged nineteen, English, married; admitted January 27, 1872. One week previous to admission had complained of sore-throat and headache, attended with constipation. On the afternoon of the day before admission was seized with a severe chill, which continued into the night, and was followed by fever and vomiting.

On admission, symptoms were severe cephalalgia, great pain and tenderness in the post-cervical region, with opisthotonos. Tongue is coated and yellow, fauces reddened; pulse full and frequent, bowels constipated. The limbs are hyperæsthetic, but not swollen. No tenderness of abdomen or spots upon this or other parts of the body, with the exception of an herpetic eruption about the mouth and on left hand. There is slight deflection of the right eye, with diplopia. Negative results from auscultation and percussion. There is no emaciation. Ordered spts. minder. and Magendie's solution of morphia.

January 28th.—Slept well last night, but complains of increased pain in head and increased tenderness at back of neck. Opisthotonos is also more marked. There is some tenderness of trunk and limbs on pressure, but no paralysis. Face is flushed, and pulse dichotomous; temperature 105°. Ordered aconite and spts. mind., wine, nourishment, and broken ice.

Evening.—Patient more quiet; temperature 104°. Ordered enema.

29th.—Symptoms continue with unabated force. Very noisily complaining; slightly delirious through the night. Takes a fair amount of nourishment in fluid and semifluid form; calls constantly for ice. Pulse 130 and dichotomous; temperature 104°. There are ptosis of right eye and dulness of hearing.

Evening.—Temperature 103°. Stopped aconite, and continued other treatment, with addition of ice to head.

30th.—Has passed a bad night; was noisy and delirious. Threw the ice off her head as often as it was applied; tossed about constantly from side to side. Has vomited last night and this morning. Temperature $104\frac{7}{10}$°. Ordered ℞. Quiniæ sulph. grs. v, acid. sulph. dil. ♏. x, *ter die;* whiskey ℥ vj, sherry to be stopped; milk, wine-whey, raw egg beaten with wine, chicken-broth, taken in quantity as she will receive it.

Evening.—Ordered enema of spts. terebinth. ℥ ss and sinapism to back, between scapulæ. Temperature 104.5°.

31st.—Mind is clear, headache somewhat abated. Slept part of the night. Still complains of sub-occipital pains and of frontal headache. Temperature 103°. Has taken tr. aconite rad. gtt. iij cum spts. mindereri ℥ ss, q. 2 h. during the night. Stopped this morning, and resumed quinine.

Evening. — Temperature 103.5°. Ordered pulv. Doveri grs. x.

February 1st.—Face is flushed, and complains that whiskey increases the headache. Quantity diminished to ℥ iv daily. Temperature A. M. 102.2°, P. M. 102.2°.

2d.—Bowels have not moved in two days. Tongue is brown at centre, with white fur on surface around this. Muscular tenderness and opisthotonos have diminished. Since admission, whenever patient has lain quietly, it has been on the right side. This morning she lies on the opposite side. There are still drooping of the right lid and a heavy expression of countenance, but hearing is improved, and general improvement marked. Temperature 101°. Ordered enema of castor-oil.

Evening.—Not so well as this morning; complains of increased headache and cardialgia. Coughs and expectorates a bloody and catarrhal matter which apparently comes from the posterior nares. There is some redness of the fauces. Temperature 104.2; pulse full and rapid. Ordered quinine stopped. Sinapism over epigastrium. Continued tr. aconite and spts. mindereri.

3d.—Patient is better this morning. Stopped aconite and spts. mindereri, and continued stimulants. Temperature 100.2°.

Evening.—Increase of febrile symptoms and headache. Temperature 106.2°. Resumed administration of aconite. Ordered enema containing castor-oil, ice to head, mustard to feet.

4th, A. M.—Temperature 103°; P. M., 105°.

5th, A. M.—Temperature 102.2°; P. M., 105°.

6th, A. M.—Temperature 102°; P. M., 104.2°.

7th, A. M.—Temperature 102°; P. M., 104.2°.

8th, A. M.—Temperature 103.3°; P. M., 104°.

9th, A. M.—Temperature 101.3°; P. M., 105°.

10th, A. M.—Temperature 104°; P. M., 100°.

11th, A. M.—Temperature 101°; P. M., 104°. Vomited her breakfast this morning, and coughs, expectorating a consistent mucous matter resembling catarrhal exudation, which is streaked with blood. Facies have changed from a flushed to a pallid appearance.

12th.—Vomited again this morning. This followed by a profuse sweat. From this date the patient improved steadily. Temperature varying from 100° or 101° to normal. Discharged cured February 29th.

Lewis Lantz, aged nineteen years, German, admitted April 15th. Two weeks previous to admission complained of great headache and pains in back and limbs, with constipation. These continued for two or three days until his confinement to bed. For the past ten days delirium has been present, especially marked at night.

No further history is given, and no treatment has been used excepting cathartics.

His appearance on admission is that of a man with cerebral disturbance. Flushed face, eyes bright and staring when awake, but having disposition to slumber. Pulse is slow; temperature 101°. Tongue is furred.

16th.—Temperature 100°; slept quietly all night. Takes a moderate amount of nourishment. Exhibits sluggish mental action. Passes urine involuntarily. Ordered pulv. opii, gr. j, q. 4 h. Whiskey, ℥jss daily.

17th.—Temperature 101.5°.

18th.—Temperature 101°. Bowels moved by enema. Patient lies quietly without speaking, except in the morning, when a short remission seems to occur. Complains of pain when his position is changed. Hyperæsthesia not marked, but muscular movement causes demonstration of pain. Assumes dorsal decubitus with head slightly thrown back. Gives evidence of pain when pressure is made anywhere over course of spine. There are no spots on the body; no gastric symptoms. Tongue is furred and brownish; face flushed.

19*th.*—Temperature 99.5°; pulse 132; respiration slow. Stomach no longer tolerates the opium. Substituted sulph. morph., gr. ⅛, q. 4 h., given dry.

P. M.—Temperature 99.3°.

20*th.*—Temperature 98.8°; pulse feeble. Is not eating as well as before. Increased stimulant to ℥ iij, daily.

21*st.*—Given enema containing fel. bov., and produced a scybalous passage. General capillary congestion and extreme feebleness; stopped morphia.

22*d.*—Temperature 100°. Patient better.

23*d.*—Temperature 98.5°; pulse irregular. Has had continuous jactitation during past twenty-four hours. Takes more nutriment.

24*th.*—Temperature 99.1°; pulse 120, full and regular. Micturition is involuntary, and bowels constipated. Tongue seems to be clearing, but pain, tenderness, and jactitation continue.

25*th.*—Is quiet this morning, with no uncontrolled muscular movements. Excretions same. Temperature 100°; pulse 125.

Evening.—Bowels are moved by enema.

26*th.*—Quiet to-day. Symptoms unchanged. Temperature 99.5°; pulse 56. Whiskey increased to ℥ vj.

27*th.*—Temperature 102.5°; pulse 132. Ordered pulv. camph. gr. j, t. i. d. Breathing is stertorous, with puffing of cheeks in expiration. There is very slight thoracic movement in respiration. Depressions are observed above the clavicles on inspiration. Bowels again relieved of scybalæ by enema.

28*th.*—Temperature 101.2°. Stertor less marked in breathing during the morning, but increased later in the day.

Evening.—Breathing more noisy and inefficient than before. Ordered sulph. morph., gr. ⅙, q. 2 h.

10 P. M.—Breathing is relieved. Sweating a little.

29th.—Sleeping profoundly. Skin moist; tongue dry; bowels costive. Temperature 101°; pulse 15[illegible]. Morphia continued q. 3 h.

Evening.—Stopped morphia. Patient has given no signs of intelligence in the last four days, except that he occasionally follows with his eyes the movement of persons about his bed.

30th.—Temperature, 103.2°. Condition unchanged.

Evening.—Breathing more stertorous. Temperature 101.2°.

May 1st.—Died at 5 A. M.

Autopsy.—Surface of brain greatly congested, with traces of lymph in the course of the vessels. In separating the brain from the spinal cord, at least two ounces of serum flowed from the incision, and the ventricles were still found full when opened. Great congestion of brain-substance, and a small amount of pus near choroid plexus on right side, were found.

Pia mater of cord intensely congested through whole length but more marked in lower portion. Large amount of serum under arachnoid of cord. Adhesions of this membrane to the cord at points.

H. O. H., aged twenty-two years, single, student. Admitted April 30th. Four days before admission patient had a chill lasting a number of hours, and followed by fever, with elevated temperature, dry tongue, and delirium. During this week, previous to admission, he had complained of pain in back and limbs, and of ozœna.

On admission he was excited and delirious, talking incoherently. Face flushed, eyes injected, pupils dilated; also slight strabismus and diplopia. The tongue is coated and brown. There are ~~hepatic~~ vesicles about the mouth, and erythema of hands. There are a marked tenderness and pain in the post-cervical region, and along the spine throughout its length, with severe headache. No opisthotonos, and no spots on body. Ordered potass. bromid., grs. xxx, every hour, and whiskey, ℥iij, daily. Milk and other fluid nourishment in such quantities as may be required. Bowels moved by enema.

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May 1st.—Patient is much better this morning. Slept well, and is now conscious and coherent in conversation. Stopped bromide potassium, and gave quinine q. 6 h. Has slight cough.

Evening.—Resumed bromide potassium.

2*d.*—Treatment continued. Is still delirious, and not looking as well as yesterday.

12 M.—Delirium continues. Medicine stopped, and muriat. ammon., grs. x, given every hour in CO_2HO, and ℞. Pulv. digitalis, gr. j, q. 3 h. Whiskey stopped.

Evening.—Pulse feeble, and extremities cold. Stopped digitalis, and resumed stimulants.

3*d.*—Continues feeble and delirious. Tongue is brown, and red at the edges. Eyes congested, and pupils deflected.

Evening.—Mind is clear and fever abated. Has taken a good amount of nourishment at all times. There is still no eruption, excepting the herpes, and pain in head and back continue, without opisthotonos, though there is restricted movement of the head forward. Ordered enema.

4*th.*—Patient continues comfortable, and is now without delirium. Appetite is good, and pulse and appearance of tongue indicate improvement.

17*th.*—Since the last date patient was considered to be slowly mending. Yesterday his friends desired his removal to another room, and since that time he has been more delirious.

18*th.*—During the past night he has been noisily delirious. Administered morphia hypodermically. This morning sweats profusely. Is now quiet.

19*th.*—Given verat. viride, gtts. iij, q. 2 h.

20*th.*—Delirium continues.

21*st.*—Quiet, and inclined to sleep. Satisfactory thermometrical record has not been obtained during the past four days, and the record is omitted. Patient is passing water involuntarily.

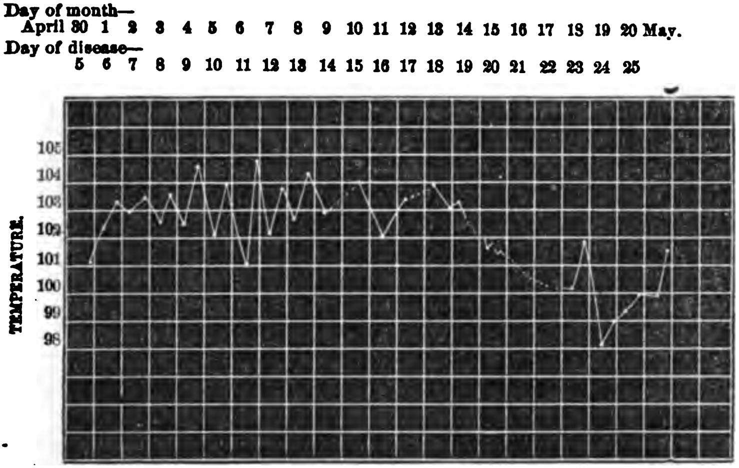
22*d.*—Quiet, but delirious, talking and gesticulating.

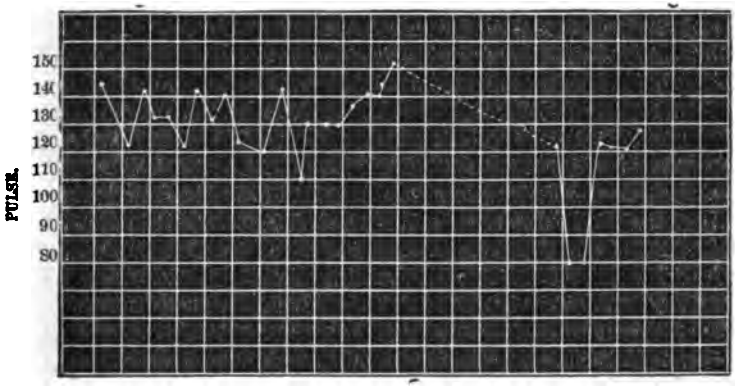
24*th.*—Mind is clearer. Still eats well, though tongue is much swollen and dry. Both eyes are injected and sensitive to light. Micturition is involuntary. Bowels are moved only by enema.

27*th.*—General appearance better. Ordered chlor. mit. hydrargyri.

28*th.*—Abdomen is much distended by gas. Ordered bismuth subnitrate, sodæ bicarb., and ginger.

29*th.*—Large involuntary passage from the bowels last night.



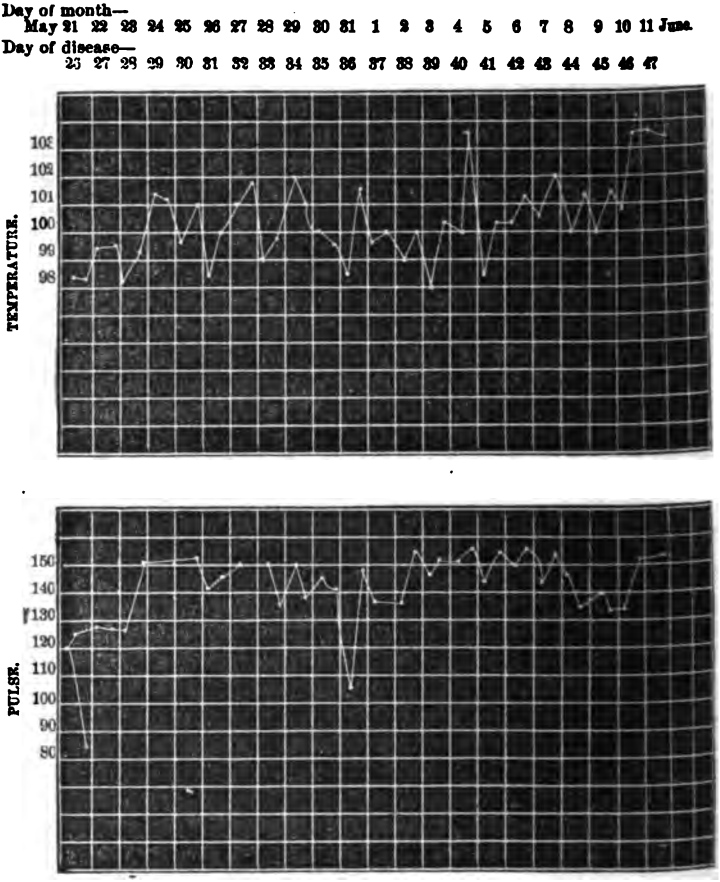


June 5*th.*—Remains in much the same condition. Slight delirium is almost continuous. Emaciation is more rapid lately. Bed-sores making their appearance over sacrum and right thigh.

10*th.*—No improvement.

12*th.*—Again worse. Lies with head thrown back, eyes staring, pupils dilated, and mouth half open. Tongue is brown and cracked. Subsultus tendinum well marked. Replies when addressed, but is delirious. Pulse 150, and feeble.

20*th.*—No change for past week until to-day, when pulse and temperature are better, and mind is clear. Has had frequent passages from bowels, and great pain when limbs were moved. Carbolic acid internally has had good effect in controlling diarrhœa.

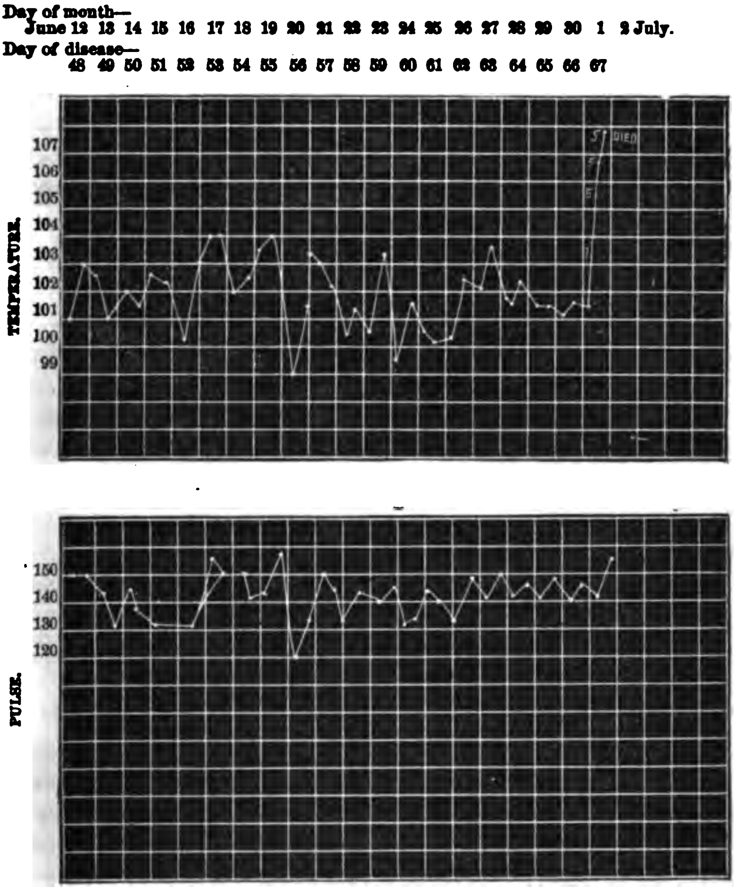


23*d.*—Ordered suppositories of opium and belladonna for diarrhœa. Is again delirious and very feeble. Subsultus marked. Surface of body is congested. Takes nourishment well. ℞. Brandy, ℥ vj, daily.

26*th.*—Has been more violent during the past forty-eight hours.

30*th.*—Gastric disturbance. For the first time, to-day has vomited food.

July 1*st.*—Speaks with difficulty; tongue is swollen. Is greatly emaciated. Eyes are open and fixed. Cries out if limbs are moved. Delirium; is noisy at night. Temperature rising.



Respiration 60.

7 P. M.—Temperature 107½°. Given cold sponging.

9½ P. M.—Died.

Bertha Feldhusen, aged nineteen years, Germany, single, domestic. Admitted April 9, 1872.

Four days before admission patient was exposed by dancing, and being out thinly clad. Next day felt chilly, but attended to ordinary domestic duties, though suffering from some occipital headache. On second day was unable to rise, from pain and soreness in back and limbs. Complained of vomiting, sleeplessness, and loss of appetite.

On admission, face flushed, tongue slightly furred; lies on her side and complains of pain in back of neck, and soreness to touch. Temperature 101°; pulse moderate. No spots on body; no evidence of thoracic trouble; no paralysis; bowels costive. ℞. Pulv. Doveri, grs. x.

10*th.*—Temperature 101°. Eats well, and bowels have been moved by enema. Examination of urine negative.

Evening.—Temperature 101°. Repeat Doveri, grs. x.

12*th.*—Temperature 100°. Still wakeful, and complaining of tenderness in cervical region. No more symptoms.

Evening.—℞. Potass. brom., grs. xxv; continue grs. x doses of q. 3 h., if awake.

13*th.*—Temperature 102°. Slept two hours last night. Face flushed, and right eye suffused with redness. ℞. Ol ricini, ft. enema. ℞. Continue brom.

Evening.—℞. Potass. brom., grs. xxx, q. 1 h., till sleep.

14*th.*—Slightly delirious last night. Quiet this A. M.

Evening.—Slept during day.

15*th.*—Temperature 104°. Conjunctivitis of right eye very marked. Applied argent. nit. sol. ℞. Potass. brom., grs. xxx, q. 2 h.

Evening.—Patient very much depressed. Pulse feeble; and she is roused only with great difficulty from the stupid, quiet state in which she lies. Takes very little nourishment. Had an involuntary (natural) passage from bowels this P. M. Micturition also involuntary. Hyperæsthesia of entire surface of body well marked, but patient signifies her consciousness of prick or pinch by a frown and moan, and not by direct or coherent remonstrance. ℞. Quinæ sulph., grs. iij, *ter die.* ℞. Continue bromide.

16*th.*—Temperature, 103.5°. No change. ℞. Quinæ sulph., grs v, q. 4 h. ℞. Brandy, ℥ ij, in twenty-four hours.

17th.—Patient better this A. M. Conscious of the necessity for evacuating bowels and bladder, and asks for vessel. Takes little nourishment. Temperature 101.7°.

18th.—Temperature, 105°; pulse small and rapid; face pale; evacuations again involuntary. ℞. Potass. bromidi stopped; quinæ sulph., grs. v, q. 6 h.; tinct. aconiti rad., gt. j, q. 3 h.; brandy, ℥ iv, in twenty-fours. Patient very feeble. Tenderness and hyperæsthesia still well marked.

Evening.—Temperature 101.3°.

19th.—Temperature 101.5°. Mind clearer.

Evening.—Temperature 101.3°.

20th.—Temperature 103°; pulse 144; respiration 39. Complains of some pain in the head, and continued delirium at night.

Evening.—Temperature 104.2°; pulse 150.

21st.—Stopped aconite and continued quinæ. ℞. Whiskey, ʒ i, q. ½ h. Patient very feeble, but mind clearer. Passages involuntary.

22d.—Temperature 101°.

23d.—Temperature 104.5°; pulse 150.

P. M.—Temperature 103°.

24th.—Temperature 102.8°; pulse 130. Had a number of loose passages from bowels. ℞. Suppos. ext. opii, gr. j, after each passage. Mind clear; tenderness in neck and back less marked.

25th, P. M.—Temperature 100°; pulse 104. This A. M. there was almost a perfect intermission of fever, and patient's mind seemed perfectly clear. During the remission the fever is greatly reduced or absent, but the countenance is pale, and exhaustion extreme. The recorded morning temperature is taken at about eleven, when the fever is again increasing.

26th.—Sleeps a great deal; eats well; but is tired of brandy and whiskey, and has sherry instead. Bowels have not moved in twenty-four hours, and water has not been passed in sixteen hours.

9 A. M.—Temperature 102°. Mind clear; pulse good. Takes nourishment and stimulant well.

12 M.—Called for a vessel, and passed water.

27th.—Temperature 101°. Passages are controlled, and converses intelligently. Pulse 132.

28th.—Temperature 100.5°. For several days the cuticle has been desquamating from face. There is still a swollen redness upon cheeks. Hyperæsthesia of limbs is still considerable, but tenderness has disappeared from back.

30th.—Temperature 101°. Is very comfortable, and very weak. Was entirely delirious during night. Takes nourishment well. Continue quinine and sherry.

May 1st.—Continues convalescent, but was slightly delirious last night.

2d.—Appetite improved, and symptoms all better.

17th.—Patient has slowly improved in general condition since last date. Eats and sleeps well.

24th.—Gradually but very slowly improving in health and strength.

June 10th.—Convalescence very slow, but is improving, and has no remaining traces of the disease.

July 1st.—Discharged cured.

Correspondence.

LARYNGOSCOPY IN PARIS.

BY BEVERLY ROBINSON, M. D.

Not long since I gave your readers a brief account of the Throat Hospital of London. To-day I shall say something about laryngoscopy as seen in Paris.

Undoubtedly of those who teach this art clinically, few are so favorably known as Dr. Fauvel, and this reputation he has acquired alike by his skill in his *spécialité* and his urbanity toward pupils and strangers who visit him at his clinic. The location of Dr. Fauvel is at No. 13 Rue Guénegand, a short distance from the Rue Mazarine, and consequently near to what is known from time immemorial as the Quartier Latin, or quarter of the students.

There is no throat hospital in Paris, properly speaking, and the clinic of Dr. Fauvel is merely for out-patients, who come twice a week to get advice gratis for divers affections of the larynx.

The number of patients is very much less than that we have found attending the Throat Hospital of London. Among them, however, may be seen relatively many more cases of growths. To what cause should we attribute this frequency of neoplasms of the larynx among the Parisians or the French generally? The answer is difficult, and we can hardly accept as serious the reply of the *chef de clinique* of the accomplished doctor, who, when asked by us the reason of this superabundance, remarked it was perhaps easily enough explained by the fact that the Frenchman was more a *braillard* than citizens of any other country. Be this as it may, the somewhat remarkable and not generally known fact has been made evident to us. Thus, Dr. Fauvel, in the space of ten years, has operated upon over three hundred growths (of all of which he has preserved more or less detailed histories) in his office practice and in his public clinic. He is of the opinion that authors are very wrong in affirming that polypi of the larynx are somewhat rarely met with; and he believes them, on the contrary, to be very frequent. In fact, he has written (*Tribune Médicale*, March 9, 1873, p. 271) that not a week passes by without his being able to demonstrate the existence, either at his private consultation, or at his dispensary, at least one and often two or three cases of glottic polypi. This statement distinctly shows, if we compare it with the statistics given by Tabold, Voltolini, Bruns, Stark, and others, that there is no country where this affection is more frequent than in France. It will no doubt, however, be rendered more acceptable to the profession, and amply corroborated, when the histories of the cases are published.[1] Like Dr. Mackenzie, Dr. Fauvel makes use of a most brilliant direct light for the purpose of his demonstrations. The light is essentially that of Drummond, in which the flame, as you are aware, is made very intense by the presence of a piece of lime and the combined action of oxygen and hydrogen on the anterior surface of the incombustible material.

The oxygen is made in town, and brought to the clinic in a gutta-percha sack, in sufficient quantity to last during the demonstration. The ordinary gas is supplied from the wall by an elastic connecting-tube. This oxy-hydrogen light is surrounded on all sides by a sheet-metallic box of oblong form, with reflector behind, chimney above, and a long tube extending anteriorly, which contains a powerful convex lens at its farther extremity. This tube serves the double purpose to unite in a focus on the patient's throat the very intense rays of light issuing from the apparatus described, and to guide the vision of the visitors, who thus have a capital view of the internal parts which compose the larynx. In our estimation, the arrangement for clinical demonstrations is very nearly perfect, and we know of but one considerable drawback to its use, i. e., the expense attendant upon the consumption of pure oxygen, which must almost necessarily make it too great a luxury for practitioners in their private practice. This objection could scarcely be urged with propriety against its adoption as a permanent fixture in hospitals and dispensaries, where the instruction and progress of students, in all that pertains to the practice of their art, are to be considered at the same time that the welfare of patients is cared for. To complete our description, we should add that the box containing the light is mounted on a sort of wooden tripod, arranged by mechanical means to be raised, let down, or more or less inclined, according to the height of the patient seated and the needs of the demonstration. At Dr. Mackenzie's clinic, the tube containing the concentrating lens is arranged so that it may be inclined at a given angle, raised, or allowed to fall, merely by applying a slight pressure, in the required direction, to its extremity. Dr. Fauvel uses only an ordinary chair for his patients while undergoing examination. Dr. Mackenzie has, on the contrary, a very ingeniously-contrived chair with a long, straight back, head-rest, and a handle (attached to a series of pulleys and cog-wheels by means of a chain), which enables him to give the patient any desirable height at will.

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[1] Dr. Fauvel's work on "Diseases of the Larynx" is now in press.

We may readily understand the utility of such a chair for the rapid and effective examination of the throats of adults and children. The aid or chief of clinic of Dr. Fauvel, during the laryngoscopic examination of patients, makes use of a small, narrow table, on the centre of which is placed an ordinary moderator-lamp, with a laryngoscope Fauvel attached to it, and by this arrangement gets a tolerably good direct light.

Which is the most advantageous, the reflected light with the use of the head-mirror, or the lamp with the direct light? According to the authorities quoted, this question may be differently answered. On the one hand, the English and Germans use almost exclusively the reflected light from an Argand burner or a student's lamp; on the other, the French, quite as exclusive, employ altogether the direct light, generally issuing from a moderator-lamp. After experimenting with both, we adopt, in preference, the first-mentioned mode of examination. Still, we do not believe that the disadvantages of the other method are so great as are oftentimes asserted, and we have never found, for our part, any of that awkwardness of manœuvring with instruments which thus far has been one of the great reproaches to the direct light. As to the patient's head getting out of the line of the light, it will do that with either method, if the patient is not persuaded of the necessity of keeping his head very steady. We do not speak of the small difficulty of learning to manage the direction of the reflected light with the head-mirror, because this is easily conquered with a little practice.

Dr. Fauvel uses his own forceps almost exclusively in operating upon growths. His forceps are like Mackenzie's ordinary forceps, with the exception that the angle of the handle with the laryngeal portion is more rounded off, and there is a catch near the rings which allows of their being maintained tightly closed. Dr. Fauvel recommends his forceps, with the extremities serrated, but without the teeth they are usually made with, to be employed by *inexperienced* operators, to the exclusion of other more novel but also more dangerous instruments. "For us," says Dr. Fauvel, "the best operatory method in the treatment of laryngeal growths is the one which has given the greater number of satisfactory results, and that is, evulsion by means of our own laryngeal forceps."

Among the local applications employed, we may mention and specially recommend the following:

1. The tincture of iodine and glycerine (one drachm of tincture to an ounce of glycerine). This mixture is employed in

cases of pharyngitis, especially of the dry variety, with considerable success. In these cases he also prescribes the carbolic-acid spray (one part of acid to one thousand parts of water).

2. A mixture of equal parts each of Sydenham's laudanum and tincture of iodine is used and found efficacious against tuberculous ulceration of the cords, and equally too in cases of simple acute catarrh of the larynx (after the expiration of the first two or three days of the attack). The mixture must be made at the time we wish to use it, as certain substances contained in the laudanum are precipitated immediately by the iodine, and the liquid formed loses a part of its properties when kept even a short while.

Laudanum by itself is a topic of considerable value, where pain is excessive and localized. It diminishes it speedily and to a remarkable degree. With the same end in view, i. e., to combat pain, a powder composed of morphine, sugar-of-milk, and gum-arabic, is projected into the larynx and directly upon the painful tuberculous ulcerations. The quantity of morphine ought not to be excessive; from one to four grains in an ounce of neutral powder is usually found sufficient to allay the symptom against which its action is directed. We deem it proper to draw attention to the fact (in a general way) that powders are far less used in insufflations into the morbidly-affected larynx by the English and French authorities on laryngoscopy than they are by the German.

Excess in this direction is perhaps a fault, and we are inclined to the belief that occasionally and "in suitable cases powders are not more irritating than many solutions in common use," and may even be a source of great comfort in cases unfortunately too often met with, where patients are afflicted with painful and incurable disease, i. e., insufflation of morphine in advanced laryngeal phthisis.

3. Tincture of iodine is employed to cauterize syphilitic ulcerations, or mucous patches in the larynx, alternated at times with the solid nitrate of silver.

4. The use of the tincture of aloes is followed by beneficial results in certain cases of catarrh of the larynx; it apparently acts as an astringent. The veterinary surgeons in France have long found it advantageous as a local application in cases

of ulcers of bad nature, resisting obstinately other treatment. The local treatment of laryngeal phthisis is not very seriously believed in, and, when the thickening and œdema are in an advanced stage, the use of astringent remedies, or in fact of local applications of any description whatever, is believed to provoke paroxysms of the already too-troublesome cough, and even to be immediately dangerous, owing to spasm of the glottis which occasionally follows their employment. And here we may mention, and dwell with emphasis upon, a matter of considerable practical importance, i. e., the exact time when solutions are to be applied, or powders projected into the larynx. As a general guide to our action, and very certainly under all these circumstances where we have a right, as it were, to expect and fear spasm of the glottis, either from the local condition of the larynx itself (stenosis, œdema, etc.), or from the nature and strength of the solution or powder employed, we may almost lay it down as an absolute rule, that the topical application is to be made during the expiratory movement, and not—unless it be in extremely rare and exceptional cases—during the period of inspiration. If this law be duly attended to, symptoms of spasm, even in extreme cases, will be far less common, and the *sang-froid* of the physician less frequently discomposed, than is actually the case. We would not have any one believe what we have just written to be at all new, or unknown and unfamiliar to many laryngoscopists. Still, in classical works on affections of the larynx, we have near us at present, the fact to which we have drawn the attention of our readers is very cursorily if at all mentioned, and nowhere, that we are aware, is it commented upon in the manner it should be, if we consider its important practical bearings.

With regard to that very troublesome affection, ozœna, Dr. Fauvel often accomplishes a cure by repeated injections of nitrate of silver into the nasal passages, beginning with dilute solutions (one part of the salt to thirty of water), and reaching, finally, a concentrated solution made with equal parts of the salt and water.

He makes use, not of the continuous nasal douche, but of a syringe, terminating in an extremity or nozzle, perforated like that of a water-pot for watering flowers. Besides this, the tube, which screws on and off the syringe, is of such a shape that it may be introduced far back into the mouth, and up beyond the uvula and posterior limit of the soft palate, and there used to wash out the posterior nares and naso-pharyngeal cavity either with water or any medicated solution we may prefer.

The divided and interrupted jet, used in the nasal passages, seems to be less liable to produce evil consequences, such as inflammation of the middle ear, etc., than the continuous douche, and should, on this account, according to some authorities, be chosen whenever we are called upon to treat affections of the nose requiring the adoption of one or the other of these methods.

We are informed that a dilute solution of chromic acid (one part of acid to ten of water) has occasionally shown itself to be a good agent with which to cauterize growths, especially those which are sessile. Confidence is still attached to the local employment, as a gargle, of bromide of potash (10–20 grs. to ℥j) for producing anæsthesia of the throat, and thus in some cases, where there are great irritability of the fauces and troublesome reflex action, rendering less difficult what is otherwise almost impossible, the proper introduction of the laryngeal mirror. In a few cases, and these were evidently of a specially nervous type, we have seen the bromide produce the tolerance wished for.

In many others, we are equally sure that it failed completely to accomplish the desired effect. Sucking ice for ten or fifteen minutes prior to a laryngoscopic examination, or gargling the throat during a less period with ice-cold water, appears to us a better and more efficacious plan to attain the result sought after.

As to the manner of getting the proper degree of tolerance, lauded and employed at the clinic of Schrötter, we may here mention it, if only on account of its somewhat complex and, for timid people, rather frightening indications. The prescription is as follows: 1. Apply to the larynx, every five minutes during the hour, a brush dipped into pure chloroform. 2. During the succeeding hour, at like intervals of five minutes each, touch the vocal organ with a very strong solution of morphia (grs. vj to water ʒj). 3. Be careful to inform the patient that on no account must he risk an effort of deglutition while he is being subjected to the latter part of this ordeal; and furthermore, he is to use a gargle pretty constantly during the hour that the applications of morphia are made, composed principally of a solution of tannic acid in water. If, after twelve hours, the patient's throat is not yet in the quiescent state necessary to an examination, the morphine is again to be applied after the manner already indicated. We have never seen the above plan carried out, and yet we feel free to add that its evident impracticability in some cases, and the time and trouble to be expended (which it almost of necessity implies) in all cases, make us gladly accept in preference the simpler plans first noticed, and which possibly, too, succeed quite as well as the latter. All local applications are made (at Dr. Fauvel's clinic) with sponges instead of brushes, as the former are considered safer. Brushes have the inconvenience, it is true, of allowing a few bristles or hairs to escape from time to time, and these may of course lodge themselves in the larynx, cause great irritation, and be very difficult of extraction. But, may not a sponge become detached from its holder, if there has been negligence in looking to its being securely fixed before making an application? In our opinion, the objection to the use of the brushes is scarcely more valid, if care be taken, than it would be if urged in a like way against the employment of sponges. And, if the bristles of each brush be subjected to some traction prior to being introduced into the patient's larynx, the danger is reduced to its minimum.

The square laryngeal hand-mirror is still employed at Dr. Fauvel's clinic, but we think improperly so, as it certainly is less elegant in appearance, and more clumsy in use, than the round mirror elsewhere met with.

Internal Remedies.—In cases of congestion, or acute catarrh of the larynx, slightly purgative mineral waters, to be drunk in the morning on rising, are employed during several consecutive days. Berminstorf water is quite a favorite, and its administration has not, it would appear, the drawback attached frequently to the waters of other purgative springs

(i. e., Pullna, Seidlitz, etc.), of being followed by somewhat obstinate constipation.

In cases of chronic order, such as ozœna and dry pharyngitis (which often accompanies the former), Dr. Fauvel adjoins to his prescription of the topics, the use of the sulphurous waters of Enghien internally. Secondary syphilis of the larynx is energetically treated with mercury (this is contrary to the practice of Dr. Mackenzie, as we have already made known, in the abstract of a lecture on syphilis, delivered by him, at the London Hospital, during the month of July, 1873).

Iodide of potash must not be given in cases of tertiary syphilis, when the œdema is considerable, for fear lest it (œdema) may be increased rapidly, and the operation of tracheotomy be made an absolute necessity in order to save a life which would otherwise be inevitably lost.

The efficacy of the dilute mineral acids, especially nitric acid, taken internally, in cases of papillary growths in the larynx, is believed in. In fact, Dr. Fauvel finds a favorable analogy for this method in that acetic acid, nitric acid, etc., are successfully employed in *external* applications on warts. To nervous, hysterical patients, bromide of potash is largely given internally, and in these cases, if there be incomplete or complete aphonia, local applications of electricity, by means of Mackenzie's electrode, are made with great success to the cords themselves.

In conclusion, we may mention that there are two other laryngoscopic clinics in Paris, i. e., the one of Krishaber (Rue de l'École de Médecine), and the clinic of Isambert (Hôpital de la Charité).

On the whole, however, that of Dr. Fauvel is best worth visiting of the three, and with regard to the others we have nothing new or of special interest to record.

Bibliographical and Literary Notes.

ART. I.—*Diseases of the Ovaries; their Diagnosis and Treatment.* By T. SPENCER WELLS, F. R. C. S., etc., etc. 8vo, pp. xxiv.–478. New York: D. Appleton & Co., 1873.

MR. WELLS has written so much upon ovariotomy that the profession in the United States, we presume, is tolerably familiar with his special views. But when we remember his unequaled experience, together with his success as an ovariotomist, enabling him to speak with an authority and an originality upon his specialty which but few can do, we are glad to welcome his views set forth in the form of a treatise.

The anatomy of the female organs of generation first engages the attention of the reader. The minute anatomy is very well described, especially that of the ovary including the Graafian follicle. The author believes the ovary to be covered by "a fine expansion of the peritonæum," in opposition to the recent view of Waldeyer[1] that it is replaced in a portion of its surface by a "germinal epithelium" of its own.

The pathology of ovarian tumors is discussed at some length, the author taking the view that the simple tumor originates in a morbidly-developed Graafian follicle from some cause (hyperæmia, blood-clot), rendering the walls thicker and interfering with their bursting, thereby allowing it to develop by the increase of secretion; from the corpus luteum, or in the arrest of the involution of a ruptured follicle; and also, when the fully-developed ovum is situated within the stroma of the ovary it may excite morbid action in the walls of the follicle. A multilocular cyst may be caused by the coalescence of two enlarged follicles, or secondary cysts may be developed from the original simple growth. We do not gain much information respecting the nature of the "dermoid formations." On pages 70, 71 it is stated:

"The peculiar formative and reproductive power inherent in the tissue of the body is as operative in the production of these vagaries as it is in the crops of multiform, morbid growths which spring up everywhere under circumstances of which we can give no rational explanation."

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[1] *Vide* Stricker's "Manual of Histology," American edition, p. 510.

We notice a statement of Waldeyer's[1] which would carry the idea that there was an inherent tendency on a certain portion of the ovum to develop certain tissues of the body:

Certain observations in pathology, as for instance the development of numerous dermoid cysts in the ovaries, have already long since led to the search in that organ for cells belonging to the horny layer. The well-known statement of His[2] could not be verified, and since then the attempt has not been successful to obtain more accurate proof bearing on this point by the study of the process of development. We would direct attention, however, to a work of Van Bambeke's:[3] this author has found that in Pélobate's fuscus the outermost germinal layer, which produces the largest portion of the epidermoid elements, dips down on both sides of Ecker's vitelline plug, at Rusconi's and Remak's anal fissure, into the cavity of the egg, there to form a portion of the third germinal layer; while at the same time the cells of the remaining portion assume entirely the character of the cells belonging to this incurving part. From this third germinal plate in the batrachia, however, are produced the internal organs and the Wolffian bodies; this circumstance should perhaps show us the right track to follow in the investigation.[4]

The description of the development of the several kinds of cysts is all interesting, but perusal of the text only will afford the reader an adequate idea.

Much has been said of late concerning the microscopical appearances and chemical reaction of ovarian fluid, therefore we had no little anxiety to acquaint ourselves with the result of Spencer Wells's experience upon these points. Atlee[5] describes the "granular cell" as pathognomonic of ovarian fluid, and Peaslee[1] mentions an "ovarian glomerulus, or 'gorged granule,'" as "characteristic when met with."

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[1] Stricker, *op. cit.*, p. 532.

[2] Schultze's *Arch. für Mikroskop. Anat.*, Bd. I., 1865.

[3] Recker, "Sur le Développement du Pélobate brun," Mém. de l'Acad. Belge, tome xxxiv., 1868.

[4] *Vide* Götte, *Centralblatt für die Med. Wissenschrift*, 1869, No. 26 u. No. 55.

[5] "General and Differential Diagnosis of Ovarian Tumors," etc., p. 458, *et seq.*

At the commencement of Chapter V., it is stated: "There are endless differences in the contents of ovarian cysts, and these differences seem to be in no way dependent on the form of the cyst or the anatomical arrangement of their tissues. Even the many strange epithelial developments are not accompanied by any special kind of fluid." The microscopical appearances are found to be quite as varied as the ocular, and are said to consist of "*Fatty granules*;" "*Globular aggregations*" (granular cells of Atlee); "*Large, colorless colloid globules*;" "*Similar colloid globules inclosing one or several round granulated aggregations*;" and those "which contain transparent flakes;" "*Flat scales of horny crystals*;" "*Cholesterine crystals*;" and "*Pigment*."

While these varied appearances are frequently found in ovarian fluid, the existence of a *peculiar cell* pathognomonic of the disease is not mentioned by the author; and, if any deductions are to be drawn from the largest experience any one man has hitherto possessed in relation to the question at issue, we must certainly conclude that the "cell" cannot be relied upon as rendering positive proof of the nature of the fluid.

The action of chemicals on ovarian fluid is very fully and well considered. Mr. Wells comes to the conclusion that neither microscopic examination nor chemical reactions, taken by themselves, are sufficient to make a positive diagnosis; but by a careful employment of both methods we may be tolerably certain. Of all substances contained in ovarian fluid, paralbumen is said to be most frequently found; yet, neither does the presence of fibrine disprove the existence of ovarian fluid, nor does the presence of paralbumen prove its existence. Still, these peculiarities are sufficiently reliable "to become an aid of some value in arriving at a diagnosis, and to encourage us to attain more accurate knowledge by more extensive observation and more complete research." On pages 132, 133, the author says: "In a dermoid tumor which I removed in June, 1869, which contained bones and hair, Dr. Schetelig made out three distinct kinds of fluids in a number of isolated cysts. In some there was an emulsion of fat and cholesterine; in others the albuminoid liquid so common in ovarian dropsy; and, thirdly, in different parts of the same tumor, 'certain small isolated bags full of a limpid, thin serum, which, being exposed to the atmosphere, soon coagulated like any other fluid overcharged with fibrine.'"

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[1] "Ovarian Tumors," etc. *Vide* Review of same by Dr. Reeve, of Dayton, O. *American Journal of Medical Sciences*, January, 1873.

Some one hundred and twenty pages are devoted to the "Diagnosis of Ovarian Tumors," comprising Chapter VI., although some of the space is given to the discussion of the treatment of the disease when complicated with pregnancy. This is one of the most interesting chapters in the book, and should be studied by every practitioner and student of medicine in the land. While there is the utmost clearness in the author's differentiation of ovarian tumor from tumors of nearly every other kind, we have not observed the diagnostic distinction drawn between it and cysts of the broad ligament, which are considered in a classification as "Extra-Ovarian Tumors." Possibly the author considers these extra-ovarian growths as amenable to the same rules for treatment as ovarian tumors proper, and no practical distinction is required.

Mr. Wells's experience of the extreme rarity of fibrous and cancerous tumors of the ovary coincides nearly with that of Dr. Peaslee.[1]

In this connection, the treatment of the tumor complicated by pregnancy engages our attention. While it is admitted that a patient may, under such circumstances, pass safely through her term, and give birth to a living child, the fact that many women abort, that many children are still-born, and that there is danger of bursting of the tumor, or its rotation upon the pedicle causing the sudden death of the patient, leads the author to recommend an early removal of the tumor, especially in multilocular cysts. The induction of premature labor (recommended by Barnes) is fatal to the child, and does not always save the mother from risk.

If, during the operation, a pregnant uterus is discovered, the judicious advice is given to "let it alone." But, on page 175, the author says: "Supposing the operator has penetrated

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[1] *Vide* review of Peaslee's book in this JOURNAL, October, 1872.

the uterus, if any conclusion can be drawn from the case in which I made this mistake and emptied the uterus, and two other cases in which the same mistake was made by other surgeons, who did not empty the uterus, but closed the puncture in its wall by wire sutures, both patients having died after aborting, while mine recovered, it would appear to be the safer practice to empty the uterus."

In the chapter "On the Treatment of Ovarian Cysts by Abdominal Tapping," etc., the author shows that puncture with the siphon trocar is attended with little danger, and that the fact of a patient having been tapped once or many times is by itself of little or no value in contributing to the mortality of ovariotomy. A certain proportion of cases is cured by a simple tapping.

The author does not seem to be very favorable to "*Tapping through the vagina*," on account of the danger of the entrance of air, and consequent inflammation of the cyst. If resorted to, it is recommended to follow with complete drainage, so that no reaccumulation of fluid can take place.

"*Tapping through the rectum*" is said to possess no advantage over vaginal tapping, and is subject to the additional danger of the entrance of fecal gas into the tumor.

The "*Injection of iodine*" possesses no advantage over simple tapping except "in cases where, after tapping within the abdominal wall, vagina, or rectum, cyst inflammation has occurred, and the patient is suffering from absorption of the decomposing contents of the cyst."

The author, in writing the history of ovariotomy, gives Dr. McDowell, of Kentucky, the credit of being the first rational operator, but seems to claim English praise because McDowell received his instruction in Scotland.

In the selection of an anæsthetic, the author gives decided preference to the bichloride of methylene, or chloromethyl. On page 334 he states:

"In very few of these operations was the condition of insensibility to pain maintained for less than five minutes. In a few it was kept up from forty-five minutes to an hour or more; and I should think the average would be about fifteen minutes. Yet I have never been at all uneasy in any one of these cases, more than 350 in number, either during the administration of the anæsthetic or from any subsequent ill-effects fairly referable to it, whereas with chloroform I never felt quite at ease," etc.

In Spencer Wells's experience, vomiting is the rule with chloroform, whereas it is the exception with chloromethyl. Erichsen recommends the induction of anæsthesia with chloromethyl, and the maintenance of the effect by chloroform.

The author claims that the presence of ovarian fluid in the abdominal cavity after the operation is not harmless, therefore thorough sponging of the cavity is recommended.

In the management of the pedicle, the author's preference for the extra-peritoneal method, in cases which admit of it, is already known. He admits the smaller immediate mortality, however, attending the application of the cautery, and cautery and ligature, but seems to fear the same after-consequences which obtain in cases in which the ligature alone has been used, and the pedicle returned, viz., adhesion to the intestines and consequent obstruction. When the ligature is used, silk or whipcord is preferred to any thing else.

It may be regretted that no mention is made of the treatment of ovarian tumors by enucleation,[1] as first performed by Dr. Miner, of Buffalo, N. Y. It would seem that this operation is destined eventually to supersede all other methods in certain cases. Dr. Miner's first case was published in the *Buffalo Medical and Surgical Journal*, in June, 1869. Thomas, in the third edition of "Diseases of Women," issued early in 1872, favorably mentions this practice, and it has been performed successfully by at least one British surgeon, and by some surgeons in this country.

We do not remember to have noticed any mention of the removal of the cyst, when small, by cutting through the vagina, as performed by Dr. Thomas,[2] of New York.

The work is quite independent in tone, and is founded largely upon the experience obtained from his five hundred operations, besides a large experience in cases not operated on, this alone making it certainly a very valuable guide for all interested in the specialty of which it treats. Atlee's and Peaslee's works had not appeared in England at the time Mr. Wells wrote, so that we have his views unmodified by other authority.

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[1] For a detailed account of the operation, *vide American Journal of Medical Sciences*, October, 1872.

[2] *American Journal of Medical Sciences*, April, 1870. Also "Diseases of Women," by T. G. Thomas, third edition.

The book is presented in excellent style, with well-made woodcuts, and is remarkably free from typographical errors. We notice, however, on page 294, "1814," which must mean 1841. The work, as a whole, is a great one, and is all that can be desired for a practical treatise.

ART. II.—*Skin-Diseases: their Description, Pathology, Diagnosis, and Treatment.* By TILBURY FOX, M. D., London, etc. Second American from the third London edition, rewritten and enlarged. With a Cutaneous Pharmacopœia, a Glossarial Index, and Sixty-seven additional Illustrations. 8vo, pp. xiv.–532. New York: Wm. Wood & Co., 1873.

RECENT studies in diseases of the skin by German as well as English students have developed so much new material that Dr. Fox has found it necessary to revise his book in order to make it commensurate to the present time. Scarcely has a work before the profession, in so short a time, undergone so thorough and complete a revision as has that of Dr. Fox; as stated in the preface, every page shows the evidence of improvement. The text has been enlarged by about two hundred and twenty pages; indeed, so thorough has been the revision by the author, that the American editor of the former edition has "had no opportunity of doing more than revise the work as it passed through the press."

A condensed chapter on the anatomy of the skin, the author mainly following the description given by Biesiadecki, in Stricker's "Histology," is furnished, which is a valuable aid to the study of the morbid anatomy, and adds greatly to the value of the book. The most noteworthy changes and additions, however, are found in the *pathology* of the skin-diseases.

The author's "*classification*" is upon the general plan as adopted heretofore, viz., on a clinical basis, except that ten classes are given instead of nine, that of "new formations" having been added, which includes cancerous diseases. Numerous subdivisions are given to each of the classes which are not contained in the former edition. Upon this topic we shall not venture any criticism, from the fact that every writer is likely to adopt a classification to suit himself, and, in the present state of science, uniformity can hardly be expected. The author concedes the propriety of a classification more upon a pathologico-anatomical basis where pathological anatomy of the various diseases is better understood.

The author inclines to the opinion of the local origin of a greater number of diseases than has been hitherto supposed, or than still is thought by some. On page 5 he says that "there is reason to think that more diseases than have been hitherto imagined originate in a misbehavior or perverted action primarily of the tissues themselves, especially the cell-elements—as, for instance, epithelioma and its growths, keloid, fibroma, and so on. In psoriasis there is no evidence that the disease is the result of a special blood alteration, nor is the amount of cell-change in any way necessarily related to the amount of hyperæmia, but rather the reverse oftentimes; and I see no difficulty in accounting for the disease by perverted growth of rete-cells, originating as an independent phenomenon. . . . In the case of cancer, much is being done to clear up the nature of the cell-changes, and no one can doubt that the disease begins in the tissues." While the author does not believe in the preëxistence of cancerous disease in the blood, he thinks there may be an hereditary or constitutional tendency to the perverted cell-action.

Upon the influence of nervous derangements in the causation of skin-diseases, it is stated, on page 6:

"Theoretically the trophic nerves, if there be such, may be disturbed, and as the result peculiar changes in the cell-elements of the skin occur; but these changes react upon the sympathetic ganglia through the sensory filaments with consequent vaso-motor changes; or an impression made on the skin by any kind of irritant may at once derange the ganglionic action through the agency of the sensory fibres, and cell and vaso-motor disturbance ensue. But, on the other hand, the inhibitory action of the sympathetic may be excited, and then the consequence will be hyperæmia as a primary condition, to be followed by the consequences of hyperæmia under certain circumstances. I believe these truths are of very great importance, and ought to be more decidedly recognized by dermatologists."

The author makes mention of the recent experiments of M. Duval, who does not believe that the white corpuscles of the blood escape into the tissues, but does not himself fully accept the theories. Inflammation is said to exist only when the hyperæmic action is attended with deposit or exudation, in which opinion we fully concur.

On page 103 is given a short description of "*kidinga pepo*," an exanthematous disease described by Dr. Christie as "resembling dengue."

Under the head of "*lichen planus*" (not described as such in the previous edition), a good deal of new matter has been added. "The disease commences primarily at the bottom of the hair-follicles with hyperæmia of the papilla, and the formation of new tissue by proliferation of the cell-elements of the root-sheath; the hypertrophic or inflammatory infiltration in the papillary layer being a secondary matter."

We could go on indefinitely in mentioning the additions to those affections previously described, but should not serve our readers profitably by so doing. For the student and practitioner the book may be regarded as excellent. The descriptions are usually clear, but the work is to be recommended especially on account of the *therapeutics*, which is just what is needed in this country. The author's style, although always clearly expressing his meaning, may not be considered strictly classical, nor is the book free from typographical errors.

ART. III.—*Die Orthopædische Behandlung der Pott'schen Kyphose*, von CHARLES FAYETTE TAYLOR, M. D. Aus dem Englischen übersetzt von PAUL BIESENTHAL, M. D. 8vo, 43 pp. Berlin, 1873.

THIS is a translation of Dr. Taylor's paper on the mechanical treatment of disease of the bodies of the spinal vertebræ, which was read by him, in 1863, before the Medical Society of the State of New York, and published in its Transactions. The author has written a preface of six pages to this German edition, in which he gives a summary of his present views upon the chief pathological points which bear upon the question of a mechanical treatment, drawn from "the large number of eight hundred and forty-five recorded cases."

He believes that Pott's disease has a traumatic origin, that it is essentially inflammatory in its early stages, and that it is curable. A series of statistics is given to establish his views.

ART. IV.—*Lectures on Diseases and Injuries of the Ear.* Delivered at St. George's Hospital, by W. B. DALBY, F. R. C. S., M. B. Cantab., Aural Surgeon to the Hospital. London: J. & A. Churchill, New Burlington Street, 1873. Pp. 218. Philadelphia: Lindsay & Blakiston.

THIS very readable little book consists of a series of clinical lectures, eleven in number, which were given in the outpatients' department of St. George's Hospital. They were published in the *Lancet*, during the latter half of 1872, and, as the author says in the preface, "with some additions and alterations, are now published as originally delivered." We are told that this is the first course of lectures which has been delivered in St. George's Hospital on this department of surgery. This statement is made the text for the usual remarks on the neglect of this branch of surgery by the profession, which one nearly always encounters in reading any recent book on otology. This is getting to be monotonous, and might, perhaps, as well be spared us.

In Chapter I. the anatomy and malformations of the external ear, together with the methods of examining the organ, are briefly considered. The question as to the importance of the auricle, in collecting and conveying sound-waves in their passage to the meatus, is answered by a case which the author had an opportunity of seeing (pages 3 and 4). This patient had his left ear, except the lobe, which remained, bitten off close to his head. "After the wound had healed, it was found, on testing the hearing, that it was not appreciably impaired for sounds proceeding from a point to the left side of the patient, but that the hearing of the right side was slightly the better of the two for sounds which proceeded from either in front or behind him. However, the difference was so small as not to be worth consideration." Several interesting cases of rudimentary auricle are reported in this chapter.

Chapter II. treats of the diseases of the external ear. The description of the variety of affections of the external meatus that are classified in some text-books on aural surgery is rightly condemned as needlessly confusing and inaccurate.

As an example, the author says that "he quite fails to understand what Toynbee meant when he described a number of cases as 'simple chronic inflammation of the dermoid meatus,' 'chronic catarrhal inflammation of the dermoid layer of the external meatus,' 'catarrhal inflammation of the dermoid layer of the external meatus, with caries of the posterior wall.'" Such classifications ought to be expunged; for, as our author continues to remark, he does not understand what is meant by a catarrhal inflammation, except as applied to a mucous membrane; and can only say that the external auditory canal is subject to inflammation, which at one time affects the integument alone, and at another the periosteum and bone may become involved. In speaking of exostoses of the auditory canal, no mention is made of the symmetrical formation of exostoses, as described by Moos in the "Archives of Ophthalmology and Otology."

The rest of this chapter is taken up with a mere outline of the anatomy of the middle ear, membrana tympani, the methods of examination, and obstruction of the Eustachian tube.

Chapter IV. treats of non-purulent inflammation of the tympanum, or chronic aural catarrh. This chapter is a very fair review of what is known of this most common and intractable form of disease, but contains nothing new.

In Chapters V. and VI., purulent inflammation, or, as he calls it, "catarrh," is considered, together with its effects. The latter part of Chapter VI. deals as well with traumatic perforation of the membrana tympani. A very interesting case is reported (page 131), where the point of a pair of scissors was pushed into a man's ear by his child at play; the portio dura was wounded, and caused instant facial palsy; the wound of the membrane healed very rapidly, leaving a moderate degree of deafness.

In Chapter VII., facial paralysis, as one of the results of perforations, is spoken of. The rest of the chapter is occupied by the consideration of polypi, and contains some good drawings of their structure by Dr. Whipham. One case of a decidedly recurring type, the growth having been removed more than eight times in twelve years, exhibited a variety of growth different from that usually met with. It is described by Dr. Whipham (pages 146 and 147, and Fig. 18) with this conclusion as to its character: "The tumor then appears to be a specimen of the round-celled sarcoma, into the composition of which the oval-celled variety enters to a very slight extent. It has more malignant characters than any I have examined from the tympanum."

In Chapter VIII. the various ways in which tympanic affections may terminate fatally are discussed. Of the three remaining chapters, two are taken up with the consideration of nervous affections of the ear, and the last with deaf-mutism. The so-called German method of education of mutes, where deaf-and-dumb children are taught to understand and employ language by observation and imitation of the articulations of others, the finger alphabet and all artificial signs being rigidly excluded, is strongly advocated by the author. While this book contains nothing new, it is, nevertheless, a good one. The style is clear and concise, and the English very good. Such a practical course of lectures on so important a subject would be a valuable addition to the course of instruction in any medical school. The type is good, as are also the illustrations. It is a book which may be read with pleasure, if not with profit, by all.

ART. V.—*An Essay on the Principles of Mental Hygiene.* By D. A. GORTON, M. D. Philadelphia: J. B. Lippincott & Co., 1873. Pp. 233.

THE author of this small volume has presented to the profession the most important of the prevailing ideas on the influence of physical, moral, and religious agencies upon the mind. Six chapters are devoted to a consideration of the mental influences of the three above agents, the last chapter being reserved for a discussion of the social problem and marriage.

The work demands careful reading. It treats of topics so vast in importance, especially to the psychologist, that a complete review would be too extensive, and therefore, while heartily recommending its perusal to those who are awake to the relations between body and mind, we must content ourselves with noticing a few points to which we take exception.

We think the *rôle* of tobacco, in shaping moral character, is much exaggerated, and that it would have been more economical to have devoted the same space to other influences, such as that of the enthusiasm awakened by religion in Matthew Arnold's sense.

An error in taste appears on page 213, where the writer alludes to the "Galileos, Jesuses, Newtons, Greeleys," etc. Along with Humboldt, Bacon, and Franklin, Hahnemann is alluded to as even more of a philosopher than a physician, and as having begotten a child at the age of eighty, dying at "eighty-eight, in the vigor of his faculties, having experimented upon himself in testing the pathogenetic properties of drugs to a greater extent than any previous physician." One is led to inquire if tobacco was one of these drugs. In the main, the views of Dr. Gorton may be regarded as sound, and, excepting an occasional use of such phrases as faith in "scape-goats," and "the unpardonable sin against the Holy Ghost," together with the too frequent attacks upon the Christian Church, he may be said to have written in a dignified style.

The book has a good index, is replete with well-selected quotations and references, and, although not superseding the writings of Spencer, Maudsley, Ray, and others, it is an attractive and useful production.

Books and Pamphlets Received.—The Cerebral Convolutions of Man, represented according to Original Observations, especially upon their Development in the Fœtus. By Alexander Ecker, Professor of Anatomy and Comparative Anatomy in the University of Freiburg, Baden. Translated by Robert T. Edes, M. D. New York: D. Appleton & Co., 1873.

Lectures on Clinical Medicine. By A. Trousseau, late Professor of Clinical Medicine in the Faculty of Medicine, Paris, etc., etc. Translated from the third revised and enlarged edition, by Sir John Rose Cormack, M. D., F. R. S. E., and P. Victor Bazire, M. D. In two volumes. Philadelphia: Lindsay & Blakiston, 1873.

An Introduction to Practical Chemistry; including Analysis. By John E. Bowman, F. C. S., late Professor of Practical Chemistry, in King's College, London. Edited by Charles L. Bloxam, F. C. S. Sixth American from the sixth revised English edition. Philadelphia: Henry C. Lea, 1873.

Chemistry, Inorganic and Organic, with Experiments. By Charles Loudon Bloxam, Professor of Chemistry in King's College, London, etc. With Two Hundred and Ninety-five Illustrations. From the second and revised English edition. Philadelphia: Henry C. Lea, 1873.

A Manual of Medical Jurisprudence. By Alfred Swaine Taylor, M. D., F. R. S., etc. Seventh American edition. By John J. Reese, M. D., Professor of Medical Jurisprudence in the University of Pennsylvania. With Illustrations on Wood. Philadelphia: Henry C. Lea, 1873.

The Student's Guide to Medical Diagnosis. By Samuel Fenwick, M. D., F. R. C. P., Assistant Physician to the London Hospital. From the third revised and enlarged English edition. With Eighty-four Illustrations on Wood. Philadelphia: Henry C. Lea, 1873.

A Treatise on Pneumatic Aspiration of Morbid Fluid: a Medico-Chirurgical Method of Diagnosis and Treatment of Cysts, Abscesses of Liver, etc. By Georges Dieulafoy, M. D., Gold Medalist of Hospitals of Paris. Philadelphia: J. B. Lippincott & Co., 1873.

Lectures on Diseases and Injuries of the Ear. Delivered at St. George's Hospital, London, by W. B. Dalby, F. R. C. S., M. B. Cantab., Aural Surgeon to the Hospital. With Twenty-one Illustrations. Philadelphia: Lindsay & Blakiston, 1873.

The Diseases of the Prostate, their Pathology and Treatment, comprising the Jacksonian Prize Essay for the Year 1860. By Sir Henry Thompson, F. R. C. S., etc., etc. Fourth edition. Philadelphia: Henry C. Lea, 1873.

Deafness and Diseases of the Ear: their Causes and Treatment. By J. C. Pennefather, L. K. Q. C. P., Surgeon to the Royal Dispensary for Ear Diseases. With Illustrations. London: Baillière, Tindall & Cox, 1873.

An Introduction to the Study of Practical Histology. For Beginners in Microscopy. By James Tyson, M. D., Lecturer on Microscopy in the University of Pennsylvania. Philadelphia: J. B. Lippincott & Co., 1873.

On the Mechanical Treatment of Disease of the Hip-Joint. By Charles Fayette Taylor, M. D., Surgeon to the New York Orthopædic Hospital, etc. New York: William Wood & Co., 1873.

Prospectus for the Second Annual Session of the National College of Pharmacy, City of Washington. Washington: Judd & Detweiler, 1873.

The Physician's Visiting List for 1874. Twenty-third year of its publication. Philadelphia: Lindsay & Blakiston.

Annual Announcement and Circular of the Long Island College Hospital, Brooklyn, N. Y. Session of 1873–'74.

Constitution and By-Laws of the College of Physicians and Surgeons of Little Rock, Arkansas.

Transactions of the Minnesota State Medical Society, 1873.

Reports on the Progress of Medicine.

THEORY AND PRACTICE.

1.—*The Infective Product of Inflammation.* [Medical Times and Gazette, June 14, 1873.]

At a meeting of the Royal Medical and Chirurgical Society, held May 13th, a paper was read by Dr. J. Burdon-Sanderson on "The Infective Product of Inflammation." The paper contains the results of researches made, for the most part during the early part of 1872, for the purpose of elucidating the pathology of secondary inflammations. It is divided into three parts. In the first part the nature of the process of inflammation is treated of, with special reference to the question how a primary inflammation gives rise, on the one hand, to general constitutional disturbance, and, on the other, to the establishment of new foci of inflammation in parts remote from the original seat of irritation or injury. To distinguish those inflammations which exhibit the tendency to produce the effects in question the author uses the word "infective," understanding it to express two sets of characteristics—one relating to what occurs at the original seat of inflammation, the other to the induced effects which manifest themselves elsewhere. Of the two groups of phenomena, it is obvious that those which are remote from the seat of primary action claim most attention in relation to the present inquiry. They consist partly in the springing up of new foci of irritation or inflammation along the course of the infected channels, partly in the occurrence of changes in the blood itself (not yet investigated) of such a nature as to show that it is impregnated with an infective poison. In investigations made by the author in 1867–'68, one branch of the question of phlegmonous infection was worked out with some completeness. It was then found that, when, in the lower animals, particularly in Guinea-pigs, local inflammations are produced either in the skin or the peritonæum by the introduction of irritant substances, two distinct sets of consequences manifest themselves—namely, on the one hand, the production of a chronic disease, affecting all the internal organs, having the characters of a chronic interstitial inflammation (i. e., irritative germination of the interstitial tissues of the lung, liver, spleen, etc.), resulting in slow caseous or fibrous degeneration, and destroying life by a gradual process of wasting; on the other, an acute process in which the same organs and tissues are affected much more rapidly, and in which we have to do with two additional elements—namely, fever, and the formation of abscesses in the irritated tissues. To both of these processes the author applies the word "infective," as in certain cases both appear to spring from an infection derived from the same source—i. e., from the same primary inflammation—and progress in the same animal at the same time. The second and third parts of the paper are entirely occupied with a summary of the experimental results. After a short account of the work of previous years, the author proceeds to give a detailed description of the more recent experiments on which his conclusions, so far as relates to acute secondary inflammation, are founded. These are divided into two series. In those comprised in the first series, the liquids of acute inflammations of great intensity were used, and the induced disease exhibited those characters which are expressed by the word "septicæmia." The results of these experiments, twenty-seven in number (which were shown to the Society in a table), may be summed up as follows: Of the twenty-seven experiments, serous liquids were employed in eighteen; liquids of subcutaneous suppurations in four; liquids from softened and infective nodules and lymphatic glands in three; and in two others the contents of an inflamed uterus. The table also exhibited another experiment in which blood of an infected animal was used. All these liquids were employed immediately after their removal from the living body of the diseased animal, and contained at the time bacteria. The animals observed were Guinea-pigs, dogs, or cats. In four cases the liquid was injected into the jugular vein; in the rest into the peritonæum. The quantities used varied from three minims to twenty-four minims. Although the liquids were similar, all being products of rapidly-progressing infective inflammations, the induced results were not all of equal intensity. In twenty out of the twenty-seven experiments tabulated, death took place within twenty-four hours. Of these, all excepting three received the excitant in the peritonæum. Peritonitis existed in every case, and it was observed that it was no less intense in those cases in which the liquid was injected into the jugular vein than in the others. It was also observed that, after injection into the peritonæum, the pleura and pericardium were often found to be as intensely inflamed as the peritonæum itself. In all but very rapid cases the peritoneal exudation exhibited the same character. It was viscid and coagulated imperfectly. It contained pus-corpuscles in small numbers, and the liquor puris often exhibited, when subjected to examination with high powers, a tremulous movement of the liquid, which was found to be due to the presence of extremely minute rods. In almost all the experiments tabulated the blood exhibited microscopical appearances which were striking and unequivocal. The liquor sanguinis contained rod-like particles, and possessed in some instances a peculiar viscidity, the nature of which must form the subject of future investigation. In the larger animals death is preceded by phenomena which resemble those of putrid infection. This is shown in the paper by a careful comparison of the symptoms with those described by Bergmann as resulting from the injection of putrid liquids into the veins. It is, however, to be observed that the quantity of a putrid liquid required for the production of the same effect is incomparably larger than that employed in the present experiments. In the course of the experiments of this series it was repeatedly observed that inflammations of a highly-infective character, yielding exudation products rich in septic mycrozymes, may be induced by the introduction of chemical irritants either into the subcutaneous tissue or into one of the great serous cavities, even when the liquids used are themselves destructive to the life of these minute organisms, or have been subjected to prolonged ebullition immediately before, and when all other precautions are adopted to guard against the possibility of septic contamination from without. In the experiments of the second series, the infecting liquids used were not products of what might be called virulent inflammation, but of more slowly-progressing inflammatory processes, chiefly characterized by softening or unhealthy suppuration, either of nodules or previously consolidated or infiltrated tissues. In the examples given, the material was derived in each instance from the diseased lungs of human beings or animals affected with chronic pulmonary tuberculosis in the stage of softening. The lesions were substantially the same in all: the serous cavities were inflamed, and contained variable quantities of exudation liquid charged with bacteria, and in most cases there were extensive adhesions and false membranes; and in all the viscera contained "infection-nodules," which were hard and firm externally, with purulent centres. In the concluding paragraphs of the paper the author cautiously expresses the inferences which he thinks are justified by the experimental results. He thinks that it has been shown that the condition which is expressed by the word septicæmia (including under the term not only septic fever, but also the intense mucous and serous inflammations by which it is accompanied) may be produced independently of the entrance of septic matter from without, by the introduction, into the serous cavities or into the circulation, of liquids derived directly from living tissues in certain stages of inflammation; and that the process by which infective abscesses are formed in various organs and tissues at a distance from some primary focus of inflammation is of similar origin, both being due to the existence in the circulating blood of an infective agent which, although of purely intrinsic origin, yet possesses all the characters of a septic poison. The question of the origin of the infective agent itself Dr. Sanderson regards as entirely distinct from that of the intrinsic or extrinsic origin of the minute organisms by which its presence is declared; for, to quote the concluding sentence of the paper, "it does not at all follow because these organisms come in from outside that they bring contagium along with them. It may be readily admitted that they may serve as carriers of infection from diseased to healthy parts, or from diseased to healthy individuals, and yet be utterly devoid of any power of themselves originating the contagium they convey."

Dr. Dickinson thought that, if he had understood the paper aright, it was opposed to the well-known facts of pathological anatomy. It pointed to the conveyance of the infective product by the lymphatics, while pyæmic abscesses in the human subject followed the distribution of the blood-vessels. For this reason it was generlaly admitted that such abscesses were due to embolic obstruction of vessels.

Dr. Sansom thought bacteria mere carriers of septic poison. Cultivated in other than animal fluids, they were comparatively inactive. In animal fluids they seem to concentrate in themselves the whole virulence of the diseased product, which after being freed from them was comparatively harmless. He also referred to the production of septic inflammation of serous membranes by injection of chemical irritants. The peopling of such fluids by bacteria by no means necessitated the idea of spotaneous generation.

Mr. Savory said the paper did not assume that pyæmia and septicæmia were invariably produced by the products of infective inflammation, but fluids other than septic might when injected produce changes similar to those the result of septic fluids. Septicæmia was usually preceded by inflammation, but that was not its sole cause. Was it certain that the minute particles of organic matter—bacteria or whatever they were called—were the sole causes of the infection; might they not be its associates only?

Dr. Payne asked if there were any means of distinguishing these septic bacteria from those commonly found in putrefying substances. He would also ask if in the secondary inflammations there were to be found any transitional forms of the process. Thus he had found in the best-marked cases of pyæmic abscesses materials totally different from what could be described as pus. In almost all, the cell-forms were few and granular matter abundant.

Mr. Hulke also asked if the experiments had thrown any light on the formation of secondary abscesses in joints in pyæmia. He was unable to account for this curious pathological phenomenon.

Dr. Sanderson, in reply, said that he would first advert to the general objections made by Mr. Savory—objections which had often presented themselves to his own mind, and of which he felt the great weight. He had, however, not brought forward the paper with the intention of settling the whole question of inflammation, including pyæmia, tuberculosis, septicæmia, etc., at once; but only as part of a series of similar studies which he hoped to continue. He therefore trusted that the paper would be judged merely in relation to the limited questions actually raised in it, and the bearing of the experimental facts on those questions. In answer to the observations of the first two speakers, he would confine himself to saying something as to the nature of the septic form of traumatic fever, and in particular as to its reaction on the local inflammatory process. The ground on which he called the fever in question septic he had endeavored to make clear in a communication made to the Pathological Society a year before. The purpose of the experiment then described was to show that, although the fever which accompanies the formation of secondary abscesses is essentially septic, it is produced independently of the introduction of septic matter from without. He wished now to draw attention to the influence exercised by this form of fever on any chronic inflammatory process going on at the time. Observation had shown that, if, in an animal affected with chronic interstitial indurations, septic fever is induced, the diseased parts become the seats of more acute changes, resulting in the formation of infective abscesses; and he held that this was one way in which secondary abscesses might be formed independently of embolism. As regards the other objection, that the bacteria are mere carriers and not agents of infection, he thought Dr. Sansom gave a sufficient answer when he said that probably this depended upon the circumstances under which they were placed: if the liquids were not poisonous, neither were the bacteria. He (Dr. Sanderson) thought no other answer could be given. With regard to Dr. Payne's suggestion as to the correspondence in the *post mortem* and the lesion associated with it, he had nothing more to say beyond what he had said in the paper. As to another point suggested—whether the infecting liquid gained or lost in activity after death—it had been found that its activity was always greatest after death, and diminished as putrescence went on. With regard to Mr. Hulke's question, why were the cavities of joints affected in pyæmia? all that could be said was that, in many of the lower animals, the serous membranes have a tendency analogous to the inflammation of the joints in man. In conclusion, Dr. Sanderson stated that his colleague, Dr. E. Klein, had coöperated with him in the preparation of his paper, and had taken a principal part in the investigation.

2.—*On the Treatment of Hydatid Cysts in the Viscera.*

[Medical Times and Gazette, August 9, 1873.]

Dr. S. D. Bird, Lecturer on Materia Medica and Therapeutics in the University of Melbourne, Australia, writes as follows: When I first arrived in this colony, in February, 1861, I found that diseases of this kind (which are almost as common here as they are in Iceland) were habitually treated in this manner, and with great success. On inquiring among the older practitioners, it appeared that tapping had been their usual remedy in almost all cases. The risk of the operation is almost *nil*, and I have many times tapped cysts, both in the lung and liver, in my consulting-room, in patients who returned to their homes in the country the same day. As much of the fluid as possible is evacuated; and we are in the habit of tapping such cases as soon as the presence of a cyst is detected, or indeed sometimes when it is only suspected. Both liver and lung may safely be explored with the fine trocar, with certain precautions.

In the *Australian Medical Journal* for March, 1871, is the report of a paper read by myself before the Medical Society of Victoria, on the diagnosis and treatment of hydatid in the lung. Since this was published I have met with many curious cases of such disease, and, as they may be to a certain extent novelties to many of your readers, I will with your permission give short notes of a few of them:

J. W., servant-girl, aged nineteen, was admitted into the Alfred Hospital with a well-defined cyst in the upper lobe of the left lung; I tapped it under the clavicle, but, before six ounces of the fluid had escaped by the canula, the cyst gave way into a bronchus (which had probably been perforated by the trocar), and the remainder of its contents were coughed up. The cure of this case occupied an unusual time, as she continued to cough up matter and portions of cyst for several months, but was eventually discharged quite well. I examined her yesterday, and could detect no remains of the disease.

E. G., aged nine years, a highly-nervous little girl, daughter of a country gentleman, was brought to me twelve months ago, suffering from a large cyst in the liver, which a homœopathic practitioner had been treating for some months with similars and the external use of vinegar-and-water. I tapped the cyst at once, and gave bromide of potassium and kamela in full doses. The child never had another symptom connected with the liver, but six months afterward reappeared with a large cyst in the top of the right lung. This was tapped by Mr. Fitzgerald, the aspirator being used. The same internal remedies were given. I have recently examined the patient, and can find no traces of either cyst, the general health also being perfect.

Some months ago I was consulted by an elderly gentleman for a large hydatid of the liver which had been several times tapped, but always refilled. He now declined any further operation. I gave him large doses of bromide and kamela, and in six weeks the tumor had quite subsided, and has not since reappeared.

In May, 1871, a man aged forty was admitted to the Alfred Hospital under my care, suffering from a large cyst, which I diagnosed as occupying the convex surface of the liver rather far back. I tapped him under the ribs, keeping the point of the trocar well up. More than four pints of fluid escaped. A similar operation was required in a few weeks, and subsequently the opening was enlarged, and an elastic catheter was introduced. Shortly after each operation the patient had urgent heart-symptoms, irregular and intermittent pulse, and lividity, and died suddenly. The liver was found to be small and healthy; the hydatid was above the diaphragm, and had in fact occupied the cavity of the pleura. The liver had not been wounded by the trocar. The following is Prof. Halford's account of the heart: "Hydatid cysts occupy the whole of the outer surface of the heart, extending from the upper surface of the auricles surrounding the large vessels, where some of them are of the size of small oranges. They seem to me to have arisen in the visceral layer of the pericardium, not encroaching much into the muscular substance. The cavities of the heart are untouched by the parasites. The visceral layer of the pericardium is much thickened, and studded with little cysts. It may be said that the echinococci occupied the cavity of the pericardium."

Mr. Fitzgerald, Surgeon to the Melbourne Hospital, recently cut into an old cyst in the lung between the ribs, and emptied it with the finger and scoop. The patient made a rapid recovery.

I have, from the experience of a large number of cases, quite convinced myself that the bromide of potassium and kamela have a decided influence over the vitality of the parasite when given continuously in large doses.

3.—*Effect of Carbolic Acid on the Urine.* By W. A. Patchett, Senior Resident Medical Officer, Workhouse Hospital, Manchester.

In the *Lancet* of April 12th, a letter appeared by Mr. James Nicholls, F. R. C. S., calling attention to a peculiar discoloration of the urine which he had observed after the external use of carbolic acid to a raw surface, and asking whether others had observed the same phenomenon, and if it was a constant sequel to the external application of the acid, and what was its probable cause.

During the past eight or twelve months I have myself repeatedly noticed that carbolic acid lotion (of the strength of 1 to 40) applied externally to a raw surface has, in from four to forty-eight hours, produced a blackish or dark olive-green discoloration of the urine. The urine looks exactly like an infusion of mint or the color produced by the addition of a little iron to a vegetable infusion, as of tea or digitalis. This discoloration does not occur with any regularity or constancy. Contrary to the experience of Mr. Nicholls, I have often seen the urine discolored by the internal use of carbolic acid; but, unless given in poisonous doses, the color is not so deep as that produced by the external application of the acid. The discoloration appears to occur in healthy individuals only when the acid is applied over a considerable extent of raw surface; but, in several cases where the patients have been suffering from Bright's disease, the application of the acid to a comparatively small ulcer—e. g., size of a florin-piece—has been followed by the blackish-green discolored urine. On the contrary, in a case of extensive scald where the whole front of the chest presented a healthy granulating surface, to which the carbolic acid was applied constantly for weeks, no discoloration or alteration of the urine whatever was produced. And in another case the discoloration of the urine was intermittent, although the acid was kept constantly applied to the raw surface. It would seem that the urine is more easily and quickly discolored by the outward application of the acid, and without the occurrence of any unpleasant symptoms or inconvenience to the patient, than by its internal administration. In only a few of a number of cases, where a weak solution of the acid applied externally produced a deep-olive color of the urine, was any discoloration produced by the internal use of the acid. In two cases of chronic Bright's disease with small superficial ulcers of the legs, to which the carbolic lotion was applied, the urine (in both cases) on the second day was of the dark-green color. Carbolic acid given internally in three-grain, increased to six-grain, doses, three times daily for a week, until, toxic symptoms—as oppression of the head, epigastric pain, and vomiting—appearing, the acid had to be discontinued, produced no change in the color of the urine of the one, but in the other the urine was of the characteristic olive-green color. In the cases of three women poisoned at Crumpsall Workhouse, in 1871, by taking carbolic acid instead of cough-mixture, I remember that the urine found in the bladder after death was of a blackish-green color, and the blood of a magenta color. Except in color, the urine does not differ from ordinary urine. The cause of the peculiar coloration is not exactly known; it has been attributed to the action of the carbolic acid upon the coloring matter of the urine, but the coloration is not by any means constant after the free application of the acid externally or its administration internally, and no change in the urine is made by the addition of carbolic acid, unless the urine contains albumen, which the acid coagulates. How is a case like the following to be explained? After the amputation of the thigh, the stump was dressed with carbolic-acid dressings. On the second day the urine was of a dark-green, smoky color, and contained a copious deposit of lithates. The discoloration remained for three days, and then suddenly vanished, reappearing the next day, and then again disappearing. Strangely, the peculiar color reappeared and disappeared alternately for about fourteen days, when it finally disappeared, although the carbolic acid was kept applied uninterruptedly. In several cases of severe erysipelas of the head and face the application of carbolized oil has produced dark-colored urine.

OBSTETRICS AND DISEASES OF WOMEN.

1.—*A Case of Epileptic Convulsions during Labor.* By Matthew Bloxam, M. R. C. S., L. S. A., etc. [Lancet, August 23, 1873.]

Any variation from the usual phenomena of parturition is so full of interest to the obstetrician that perhaps the following case my be considered so much so as to be worthy of record:

E. S., aged nineteen, of fair complexion. Said never to have had a day's illness till the present moment, being pregnant for the first time. She was taken in labor on Friday evening, March 7, 1873.

When examined about nine o'clock, the skin all over the body was peculiarly harsh and dry, though quite free from heat or fever; pulse regular; tongue clean; no head-symptoms; urine had just been passed; pains regular; and a peculiar very deep-colored rusty-brown-black ring around each nipple.

On examination *per vagina*, the head was well down in the pelvis (which seemed to be rather over than under the usual standard), and covered by the uterus. The os uteri would not admit the finger during a pain, but in the interval it relaxed to about the extent of a sixpence. The membranes had given way, liquor amnii escaping freely. Head presenting in first position. At the vaginal orifice could be felt what was at first thought to be a thick fold of vaginal mucous membrane, with which it was continuous, as it then seemed, on the right side, but free on the left, and attached above to the symphysis pubis beneath the urethra, and below lost on the posterior wall of the vagina. It was subsequently found that this thick band was attached only by each end—at the upper part just below the urethra, and below to the posterior wall of the vagina, and rather to the right of the median line.

On Saturday, March 8th, I was called in haste at 7 A. M. Was told the patient had just recovered from an hysterical attack. She was making great complaint of the severity of the pains, being quite conscious, and was with great difficulty induced to keep any thing like quiet, or remain in bed. On examination the head was well down in the cavity of the pelvis, and labor going on rapidly. In a few moments the patient was attacked with a very severe fit of epilepsy, in which she became very livid, and seemed about to die from suffocation. Cold water was freely applied, and the patient soon recovered, becoming perfectly conscious, and at the same time so very unmanageable that she was obliged to be held by myself and attendants to keep her in bed. The convulsions being repeated, it became evident the sooner she was delivered the better; and, it being quite impossible to effect this unassisted, owing to the violent struggles of the patient, I asked my brother, Dr. Bloxam, of Mount Street, to oblige me with his advice and assistance. He, having examined the case, thought that it would be better not to give chloroform if it could be avoided, and, having carefully made out the attachments of the band before mentioned, determined to remove it, as it not only prevented the descent of the child's head, but so narrowed the vagina that to introduce the forceps was impossible, and, even if that could be effected, to extract the head without laceration of the soft parts was out of the question. While the attendants and myself held the patient down on the bed in the necessary position, my brother applied a carbolized catgut ligature to the upper end of the band, just below the urethra, and to the lower, well within the vagina, and cut out the intervening portion. The patient was no sooner replaced in bed than she had another very severe convulsion, and as soon as it had passed off, and while in a state of stupor, Dr. Bloxam rapidly applied the forceps, while the patient was kept from any unexpected movement by myself and the attendants, and she was delivered of a live female infant. The placenta followed in due course, without the least hæmorrhage.

The convulsions continued frequently after delivery, the patient now being quite unconscious during the intervals, with a very rapid pulse, hot skin, and congested face. Cold was applied to the head, and twenty grains of hydrate of chloral given for a dose, to be repeated in two hours if the convulsions again took place. This still being the case up till five o'clock in the afternoon, a powder of eight grains of calomel and two drops of croton-oil was given; and fifteen grains of chloral with twenty grains of bromide of potassium in a table-spoonful of water every hour till the fits no longer occurred. When seen again, about nine in the evening, the powder had not operated. The patient quite unconscious; pulse too rapid to count, but firm and full; convulsions rather less frequent. Bromide mixture to be continued. At eleven another convulsion took place, during which a small clot had been passed from the uterus. An enema of castor-oil and turpentine was now given, and the patient left for the night. To continue the bromide mixture.

March 9*th*, 10 A. M.—No convulsion since 11 o'clock the previous night. Enema operated well, the bowels also being moved several times during the day. Patient in an insensible state, but with great difficulty could be made to put out the tongue. Pulse too rapid to count.

From this time the patient continued slowly to improve; the pulse, however, remained at 180 up to Friday, March 15th, when it fell to 96 per minute, at which rate it still remains. The wounds in the vagina have nearly healed. No convulsions.

In conclusion, let me draw attention to the treatment of this case. 1. Chloroform was not given, on account of the congested state induced by the severity of the epileptic attacks. 2. Bearing in mind the late Dr. Tanner's views of these attacks during labor, opium was equally to be avoided, none having been given from first to last; and, though he says that bromide of potassium is the only drug that can do good in the way of medicine, it seems to me the hydrate of chloral is a valuable remedy under such circumstances, and particularly if combined with the bromide. 3. The diet consisted of large quantities of milk, yelks of eggs, beef-tea, elly, etc., no wine or spirit having been given.

The sudden termination of the convulsions on the expulsion of the small ot from the uterus must not be forgotten, nor the fact that, though the catheter was duly passed during the first few days, but very little urine was ever found in the bladder. The urine was passed into the bed, and the quantity in the course of a day or two became very large; it now being passed in the usual manner.

The patient was the victim of seduction, and had undergone great mental anxiety. The infant has been brought up by hand from its birth, and with her mother continues to improve daily. From Friday evening till Saturday night the patient had in all twenty fits of epilepsy.

2.—*Case of Inversion of the Uterus.* By JOHN PRANKERD, F. R. C. S., England. [Obstetrical Journal, August, 1873.]

November 7, 1872.—Mrs. D., aged twenty-two, a strong, healthy woman, one week after the birth of her first child, in which she was attended by a midwife, and nothing particular occurred, was straining at stool, when she felt something give way, and immediately afterward found a large body between her thighs. She became alarmed, and sent for her friends, who called me to her assistance. I found a large tumor, the size of an infant's head, hanging down many inches below the external genitals, from which a bloody serum exuded—in fact, the whole uterus was turned inside out. I at once attempted its reduction; but, notwithstanding it passed thoroughly into the vagina, I could not restore it to its original position, although considerable force was used. I recommended perfect rest on the back, and gave sedative medicine. On the following day, assisted by my son, Dr. O. R. Prankerd, who put her fully under the influence of chloroform, I endeavored to reduce the womb to its normal state; but after we both manipulated in various ways, by slowly compressing it upward and increasing the force as much as possible, with the hand fully in the vagina, and persevering for a long time, we could not succeed. Great collapse followed—so much so that I felt somewhat alarmed for her safety. As the bowels were rather confined, I ordered some aperient medicine, and the next day found matters much the same, save that there were sickness and irritability of the stomach. I introduced an air-pessary, and distended it with air as much as possible, requesting her sister, a clever and intelligent person, to remove it or not, as it gave pain or inconvenience, and ordered effervescing medicines. The following day I did not see her, as she lived upward of five miles from my own residence; but on the 11th I again visited her, with Dr. O. R. Prankerd, and, finding there was no change from the first state, we again administered chloroform, and pressed the womb upward from within the vagina in every way we could, but without any good result. Collapse coming on, we were obliged to desist. The air-pessary was reapplied within the vagina, with instructions to remove and cleanse it daily; and she was seen up to the 19th, when, having in the mean time met a professional friend, I mentioned the case to him, who drew my attention to some cases reported in the *British Medical Journal* by Dr. J. Braxton Hicks, where he advised the application of a stethoscope—the cup-end against the fundus uteri, and the ear-end outside the vagina—kept up by a T-bandage. This I accordingly did, and found next day it had caused little inconvenience, but without being of any service. I then tightened the bandage, and the pain became so great as to take away all sleep and appetite, making her very ill, obliging me to take it down the following day. A good deal of sanious discharge followed, and nothing could be done but keep the part well washed out with astringents until the 23d, when the uterus came down externally much as at first, and was returned within the vagina by the patient herself. On the 24th the air-pessary was applied in the same manner as before, and on the 30th the menses appeared. The air-pessary was still kept up, and on the 4th of December I found that the uterus had returned to its right position. Two fingers could be introduced within the os, which was patulous and soft. On the 9th she was much better in every respect, and on the 17th considered herself to be well, and was following her domestic duties.

This case I consider fully exhibits the advantage of continuous steady and prolonged pressure in the reduction of an accident (so alarming to the patient and trying to the medical attendant) over any forcible or sudden manipulation. It shows also that the uterus may become inverted a long time after the birth of a child without any very great disturbing cause, also that it may remain unreduced a month, and be easily restored to its proper position after various forcible and painful measures have been unsuccessfully used.

3.—*Ovarian Tumor removed by Enucleation.* By WALTER BURNHAM, M. D., Lowell, Mass.

Ovariotomy.—On the 17th of last month, I was called to visit Miss A. W., of Vermont, aged twenty-two, who has been suffering from the inconvenience of an enlargement of the abdomen for about four years. She had menstruated regularly, and had but little pain and inconvenience, except from the size and pressure. She could exercise freely, but not rapidly; and chose to be upon her feet a considerable portion of the time, as the sagging of the tumor relieved the pressure upon the lungs and heart.

I arrived there, in company with Dr. Sherwood, of Fairfield, at about ten o'clock A. M., and made a hasty examination, and soon was satisfied that I had a unilocular cyst only to contend with, and also that there were not extensive adhesions; but, as I could only move it to a limited extent, I also concluded that it had only a short pedicle. I advised Dr. Sherwood that we had better make preparations and operate the same day. He at once sent a messenger for some other medical assistants, who were prompt at the appointed time. The table was prepared in the usual manner, and a tub placed under the table to receive the contents of the tumor, and at 1.30 P. M. she was dressed for the occasion and placed herself upon the table without assistance. Chloroform was administered by her attending physician till she was in an anæsthetic state, when the napkin was changed for one moistened with ether, and immediately I was informed that she was ready for the operation. My first incision was made two inches below the umbilicus, and carried down over the linea alba about three inches to the peritonæum by a free cut; then I seized the peritonæum with the forceps, and carefully cut through it by a horizontal stroke of the scalpel, when I introduced a grooved director, and completed the incision through that membrane with a bistoury, as far as the angles of the incision through the skin. About two pints of serum flowed from this incision, which caused a little delay. I then introduced T. S. Wells's ovarian trocar into the cyst and drew off nearly fifty pounds of clear, limpid serum, which passed into the tub under the table through a three-fourths-inch rubber tubing that was attached to the trocar. This done, I drew the sac through the incision upon the surface of the abdomen. I had previously informed Dr. Sherwood of my intention to enucleate the cyst in this case, and explained to him the process, that he might intelligently assist me if required.

I then made a small slit through the peritoneal coat near the pedicle, and with the handle of my scalpel separated the two coats from each other to a small extent, until I could grasp them in either hand, and at once concluded the separation by pulling them apart, and thus removed the entire sac proper as belonging to the tumor; while that portion composed of peritonæum was laid back upon the abdomen, that I might examine it, and wait a little for hæmorrhage to start if at all. The effects of the atmosphere, though at a high temperature, soon contracted and corrugated the peritonæum to less than half its size, when I separated the cyst from it. On examination of the inner surface of the peritonæum, I found the vessel spread out upon it in a complete net-work, like that of an inflamed conjunctiva largely magnified; but there was no hæmorrhage, except one small artery where I divided the peritoneal coat; and here a small clot had formed, and I thought best to put on a ligature, as I did also on one upon the omentum, leaving the ends out at the lower angle of the incision, to keep it open for the discharge of any matter that might be deposited in the cavity.

After waiting more than an hour to allow the force of the heart to return, the sac was covered by a warm napkin before returning it into the abdomen. But, finding no bleeding, I then placed it back into the cavity of the abdomen, and closed the wound by three sutures, one of which I passed through the edge of the peritonæum where I made the slit to secure that point to the opening, in case any clot should form and require suppuration to remove it. Over this, adhesive straps and a compress of cotton, to fill the vacuum of the abdomen, were placed upon her, secured by a straight bandage.

I have made one hundred and ninety-nine ovarian operations, and, so far as the removal of the tumor and completion of the operation were concerned, this was done sooner by six minutes than I have ever before performed it, and without any attempt at haste. But this method has the advantage also of not requiring any ligatures to bleeding vessels, or the pedicle, or any clamp even, for, as there are no vessels cut, there are none to bleed. But, as this was the first time I had made the operation in this manner, I thought it prudent to leave it so that I could watch it myself for an hour.

I believe Dr. Miner, of Buffalo, N. Y., was the first to recommend this mode of treating the pedicle, and much credit is due to him for what seems to me a very great improvement over all others; both in convenience to the surgeon and in the safety of the patient.

After the delay in the dressings until the ether was fully exhausted, she was dressed for the bed and carefully laid into it, and the eighth of a grain of morphia given her. She soon after fell into a quiet sleep for an hour, and, waking, complained that she had had no dinner, and was hungry. Took a cup of gruel, which was repeated through the night as she demanded; took another eighth of a grain of morphia in six hours, and slept half the night.

18*th*, 6 A. M.—Had some headache; pulse had increased to 100; and, after inquiry, I found she had suffered for two hours with retention of urine. I drew off about a quart of water, which relieved her head, and the pulse returned to 80.

May 31*st*.—Received a letter stating that she had been doing well all the time, and had good appetite, etc. She is now nearly well, the sutures removed, the ligatures have both come away, and the wound all closed; but I do not think it best to allow her to go out too soon, or to move about the house much.

I shall be glad to see other surgeons adopting Dr. Miner's plan by enucleation, and let the profession know the results.

I consider this case as cured in two weeks, although it is prudent to require her to remain quiet for several weeks more. I have never closed the wound or allowed it to close, until all the ligatures have come away; and I have many times seen a great advantage in having the ends to manipulate with where abscess has formed, and I have never yet seen any objection to their presence. Besides, I have several times known serious harm, and even fatal results, where other surgeons have cut the ligatures short and closed the abdomen over them. Abscesses have formed and opened in the perinæum by the rectum, vagina, and at the point of incision. In all my cases, I have but one where abscess or suppuration has followed the operation with bad results. That one occurred twenty days after, and rapidly terminated fatally, and it was not until after a *post-mortem* examination that an abscess was suspected, so rapid was the progress. —*Boston Medical and Surgical Journal.*

4.—*Remarkable Cases of Persistent Hymen.* [Glasgow Medical Journal, vol. v., No. III.]

Dr. St. Clair Gray reports a very interesting series of cases of persistent hymen, which have equal importance to the obstetrician and medical jurist, as they afford incontestable proof that persistence of the hymen is compatible with the wedded state, that its destruction does not necessarily follow even the calling of a prostitute, and hence that its persistence after attempted rape must not be relied upon solely as evidence sufficient to disprove the charge.

Case I. is that of a lady, aged forty-three years, married twenty-four years, suffering from a tumor connected with the right ovary. Vaginal examination was attempted, but at first no vaginal orifice could be discovered, the meatus being guarded by a perfect hymen having anteriorly a small aperture which permitted the escape of the menstrual flow. There was a slight depression involving the anterior portion of the perinæum and the posterior portion of the hymen. This depression, evidently the result of frequent attempts at coitus, was, under pressure by the finger, capable only of affording a *cul-de-sac* not more than three-quarters of an inch in depth, while its normal depth was but one quarter of an inch.

Case II. was that of a lady, aged thirty, married ten years, but childless, and with symptoms of prolapsus uteri. On a vaginal examination, the os uteri was found about an inch from the meatus. A thin membrane intervened between it and the finger. This membrane was a persistent hymen, which, from frequent attempts at sexual intercourse, had become pouched, so as to give rise to the formation of a perfect *cul-de-sac*, which in its normal state was from three-quarters of an inch to one inch in depth, but under pressure, either by the finger or the speculum, was capable of being distended to the extent of about one inch and a half. Its persistence was evidently due to the presence of strong bands of fibrous or fibro-elastic tissue, which rendered the structure as a whole very resilient.

These two cases are, it is thought, sufficient to prove that, even under circumstances the most favorable for its rupture, the hymen may remain intact; and, if we remember that in cases of attempted rape the circumstances are less favorable—any struggling on the part of the female having a tendency to prevent perfect penetration—we are, we think, warranted in inferring that in such cases the proportion of those in which the hymen is not destroyed must be considerable.

Still further, however, to strengthen this position, Dr. Gray relates the particulars of three cases in which the hymen was found persistent in prostitutes. These three cases were found among about 1,500, who within the last few years have applied for admission to the Glasgow Magdalene Asylum, Lochburn, Maryhill; and, should subsequent experience establish this as the precise proportion, viz., 1 in 500, it will considerably affect the significance of persistence of the hymen as an evidence or a sign of virginity.

Dr. Gray adds a report of three cases of vaginismus with persistent hymen in married women. In one the patient refused to submit to any treatment, although the sensitiveness was such as to prohibit matrimonial connection, and at the end of eighteen years she was still in the same condition as previously to her formal marriage eighteen years before. In the other two cases, dilatation and the use of atropine pessaries effected a rapid cure, and the patients have since both conceived and borne children.

5.—*The Physiology of Menstruation.* [Medical Times and Gazette, July 26, 1873.]

It is probably the general belief among physiologists and the profession in general that during menstruation one or more ova reach the uterus, and there either become attached to the surface of the mucous membrane or disappear, according as fecundation has occurred or not. If an embryo is developed from the ovum it will correspond with the menstruation immediately preceding—or, in other words, pregnancy will date from the menstruation which last occurred. Dr. Kundrat, of Vienna (Rokitansky's senior assistant), has just published an account of certain researches of his upon the anatomical condition of the uterine mucous membrane before, during, and after menstruation, which throws very grave doubts upon the correctness of this belief (*Medizinische Jahrbücher*, 1873, No. 2, p. 135). Kundrat's investigations are all the more worthy of attention, that they were of a purely anatomical nature. He examined the mucous membrane of the human uterus in the intervals of menstruation, immediately before the hæmorrhage, during the hæmorrhage, and again after it had ceased, and the results which he obtained are certainly in favor of the considerable modifications which he would introduce into the physiology of ovulation and menstruation as presently received. The mucous membrane of the human uterus in the "state of rest" has certain peculiarities, as pointed out by the author. There is no submucous tissue, and the mucosa comes into immediate union with the muscular layer. Its matrix is peculiarly rich in round or spindle-shaped cells. The glands, which it is known to possess in great numbers, are lined, like the free mucous surface, with ciliated epithelium. This condition is markedly altered at the monthly period of uterine activity. The mucous membrane is swollen, thick, loose, and almost diffluent, covered with a whitish or bloody mucus, finely injected at spots, and in many cases uniformly colored of a deep red. A microscopical examination reveals increased abundance of the cellular matrix, especially at the surface, with great elongation and dilatation of the glands. So far there is nothing specially original in the description given by Kundrat, but new and important facts remain to be enumerated. He discovered, in the first place, that the condition of uterus just described probably precedes the occurrence of the discharge of the ovum and—what is perhaps more striking—the menstrual flow by "several days." The author considers that this observation goes far to prove that the uterus is prepared for the reception of the ovum a certain time before the rupture of the Graafian vesicle. Again, while the rough characters remain as described during the menstrual flow, with the addition of the oozing from the surface, and for a short time after it has ceased, careful examination reveals a very remarkable change in the microscopic appearances. The cells of the stroma and the vessels, as well as of the epithelium of the glands and surface, are dull in appearance and filled with fat-granules. The question occurs, What is the relation of the hæmorrhage to this fatty degeneration of the cells and vessels? Kundrat replies by stating his belief that the hæmorrhage does not cause the fatty change, but is caused by it. He refers to the fatty change which is known to occur at the end of pregnancy, and would consider the two phenomena homologous. He also points out the improbability of the cause of the flow being found in congestion, as this occurs so frequently without hæmorrhage. One fact he has ascertained is, that the fatty change is most abundant at the surface of the mucosa, where the bleeding takes place. The anatomical sequence of events, therefore, according to Kundrat, at the monthly period of uterine activity is—swelling of the mucosa, fatty change in the cells and vessels, vascular rupture, and hæmorrhage. With the blood much altered epithelium is thrown off, but not the whole mucosa, as some believe. It is a short time after the cessation of the menses before the mucous membrane has returned to its "condition of rest."

In inquiring now into the physiological relations of the three processes —the swelling of the mucosa, the discharge of the ovum, and the flow of menstrual blood—Kundrat insists strongly upon the ascertained chronology of the events. The first mentioned of the three is the first in order of time, and it is almost certainly the preparation for the reception of the ovum. It is much more improbable that the uterus during the menstrual flow is in a condition suitable for this function—with a retrogressive process going on in the mucosa, its vessels ruptured, and its surface discharging blood. It is even more improbable that the mucosa in this state of degeneration will on the descent of an ovum take on a totally opposite process, and become highly developed. The type of the impregnated uterus is seen in the active uterus when the mucosa is swollen and menstruation has not yet commenced. If the bleeding does commence, it is a sign that the ovum has perished, and that the mucosa is returning to a state of rest. Thus we arrive at the highly-important conclusion that a developing ovum, or growing embryo, belongs not to a menstrual period just passed, but to one just prevented by fecundation. Löwenhorst has already expressed this opinion from a consideration of the clinical aspects of menstruation, and we believe that the method of calculating the duration of pregnancy suggested by the new facts is not altogether a new one among the gynæcologists and practitioners of this country.

6.—*The Uterus in Pregnancy.* [Medical Times and Gazette, August 16, 1873.]

The anatomy of the gravid uterus and the fœtal envelopes has been recently investigated afresh by Dr. Kundrat, of Vienna. The account furnished by the author in his paper (*Medizinische Jahrbücher*, 1873, No. 2) is partly confirmatory of the accepted description of these structures, and partly the opposite: in either case it deserves careful attention. The following points, which are the most generally interesting, refer to the human uterus and embryo:

The mucous membrane of the newly-impregnated uterus is known as the decidua, and is familiarly divided into the decidua vera, reflexa, and serotina. In structure it at first somewhat resembles the uterine mucosa in or before menstruation; it is thickened, the glands are dilated, elongated, and tortuous, and there is a great increase of intertubular cells. In all respects the structure of the three portions of the decidua is very similar. Inferiorly the vera suddenly ceases at a short distance from the cervix in an overhanging border, and the cervix takes no part in the formation of the fœtal cavity. Both the Fallopian tubes and their inferior openings are patent during the whole period of pregnancy. When the impregnated ovum reaches the inferior tubal opening, its progress, according to Kundrat, is not obstructed by an adhesive growth of the opposite mucous surfaces to each other, as some observers believe, for no such adhesion exists. For the same reason the ovum does not push before it and invaginate a portion of the mucosa, which becomes the decidua reflexa. The latter is clearly an outgrown and infolded portion of the decidua vera; for it possesses glands on its deep or ovular, as well as on its free surface. The ovum is retained at the fundus of the uterus by the swollen decidua. If

the swelling is not so great, the ovum may travel down toward the cervix; and it is for this reason that placenta prævia is more common in multiparæ. Kundrat does not believe that the ovum enters the mouth of a gland, but that it develops on the irregular surface of the serotina. As pregnancy advances the uterus enlarges, and the connection between it and the ovum becomes more intimate and complex. The enlargement of the uterus is at first out of proportion to the growth of the embryo, and a free cavity exists between the vera and the reflexa, which is filled with a somewhat opaque mucoid fluid. It is not till the fourth month that the embryo fills the uterine cavity, and the walls, which were previously disproportionately thick, become disproportionately thin, while the envelopes become transparent. In the fifth month the process has advanced yet another step, by the adhesion—partial at least—of the opposite walls of the uterine cavity; that is, of the decidua vera and the decidua reflexa.

In regard to the connection between the chorion and the decidua, it has often been represented that the processes or villi of the former pass into the glands of the latter. Kundrat maintains that this arrangement was "but seldom" to be discovered. On the contrary, the chorion-villi were found to be fixed in the grooves of the serotina and on the sides of its elevations by a connective mass composed of mucus and degenerated epithelium. Other villi had buried themselves in the tissue of the serotina, and formed a connection so intimate that any attempt at separation ended in rupture. It is here that the placenta is afterward developed. As gestation proceeds, the changes on the decidua are very considerable, and in the last months peculiarly interesting. The decidua reflexa becomes attenuated by pressure until reduced to a simple layer of the transparent envelopes of the embryo, of which it forms the most external portion. The decidua vera and decidua serotina, on the other hand, remain as comparatively thick layers of tissue, compact on the surface and cellular, but spongy in their deep portion, from the presence of the numerous ends of the dilated glands, which represent sinuses lined by epithelium. As the termination of pregnancy approaches, there occurs, as we have said, a remarkable change on the lining membranes of the uterus. These and also the reflexa become whitish, dull, and of a pale-yellowish or even yellowish-gray tint, opacity replaces transparency, and the process, which is discovered by the microscope to be one of fatty degeneration, passes into the deeper layers. This description of course reminds us of the simultaneous fatty degeneration of the placenta. When parturition occurs, a portion of the membranes is expelled with the fœtus, and it is interesting to inquire into what part, if any, of the envelopes is retained. Careful examination certainly reveals that the superficial portion of the decidua vera is, as a rule, included in the fœtal membranes, while the deeper portion is retained, although this is not always the case. During the first week *post partum* the discolored lining membrane of the uterus may be found microscopically to present the characters of the decidua vera, but the sinuses are full of blood, the superficial cellular layer gone, the fatty degeneration extends to the deepest layers, and the tissue generally is infiltrated with round cells and blood. The lochial discharge consists of such cells and of products of disintegration. In the second week *post partum* the process has still further advanced, and the epithelium of the exposed sinuses is found to be proliferating. Restitution now begins and advances, and soon there is found on the surface of the muscular coat a fine layer of connective tissue, covered by epithelium and furnished with young glands, to represent the mucosa of the uterus, which is again at rest.

7.—*Delivery of a Living Child at Six Months.* By E. T. Chester, M. D., Cedar Springs, Michigan. [Medical and Surgical Reporter, August 23, 1873.]

Mrs. J. P., aged twenty-nine years, a small woman, of anæmic appearance, consulted me on the 1st of March, 1873. The history of the case is as follows: Mrs. J. P. has had one child, and at the time of her labor craniotomy was performed. The early stage of her former labor appeared to go on favorably enough for a short time, but uterine contraction became feeble after a few hours, and at last entirely ceased, while the head was above the brim of the pelvis. Symptoms of prostration were present, and after waiting thirty hours it was considered by her medical attendants that further delay might prove serious, and craniotomy was performed.

She consulted me at the sixth month of her second pregnancy, and gave me the history of her case. I told her that I would correspond with her attending physician. I did so, and became convinced that the following course was the best, and complicated with the least danger: I recommended exercise in the open air, a good generous diet, combined with iron and quinia sulph. Taking into consideration the history of her first labor and the risk I should run by allowing the patient to go on to full time, I decided to induce premature labor. At the end of the seventh month I considered myself justified in so doing, for the patient was anxious to have a living child, and the risk of inducing premature labor at the end of the seventh month would not be attended with so much danger to the patient.

On the 1st of April I commenced operating for the induction of premature labor by introducing a sponge-tent and keeping it in position by a plug in the vagina. This I removed every eight hours and introduced plugs of a little larger size; warm water was thrown up the vagina for the purpose of enlarging the sponge-tents. I pursued this plan of treatment for nearly four days, and a dilatation began to take place. On the morning of the 4th of April, the strength of the patient beginning to diminish, I decided on puncturing the membranes, which I declined resorting to in order to afford protection as much as possible to the child. The membranes were easily reached with the finger, and a large quantity of liquor amnii escaped. I then administered a teaspoonful of the fluid extract of ergot (Tilden & Co.'s) every half-hour for two hours. Pains commenced and continued at intervals until nine o'clock P. M., when they began to diminish. Every effort was made on my part to keep up the strength of the patient; beef-tea and and wine were given many times during the day. At ten P. M. her pulse rapidly increased in frequency but diminished in strength. The head of the child was then entering the cavity of the pelvis, and, the pains being inadequate, I decided on terminating the labor as soon as possible. I administered a little chloroform, and applied the forceps, and very soon succeeded in bringing into the world a living child.

My patient made a rapid recovery, and at this writing both mother and child are enjoying a good degree of health.

8.—*Galvanism in Post-partum Hæmorrhage.* By R. C. Mackintosh, M. D. [British Medical Journal, August 9, 1873.]

The following case may be considered of interest, as furnishing an instance of the efficiency of a mode of treatment for the great opprobrium of obstetric art, which, if not new and little known, is at any rate far from being so widely employed as its numerous advantages would appear to indicate that it should be.

The patient was in an extremely feeble state of health, and subject to epileptiform seizures. Convulsions came on during the first stage of labor, and could only be checked by keeping her under the influence of chloroform for some time. Failure of uterine action occurred before the os uteri was fully dilated; but, as it was sufficiently dilatable, forceps (Beattie's) were introduced, and delivery was accomplished. Still, the uterus did not contract, and, after the placenta was removed, hæmorrhage could only be restrained by keeping the hand within the uterus. Grasping and kneading the uterus, cold affusion externally, and injections of cold water *per vaginam*, produced no effect. A dilute solution of perchloride of iron was freely injected into the uterus, but proved ineffectual. The employment of galvanism was then suggested as a *dernier ressort*, and one of Stöhrer's portable coil-machines was procured. An interrupted current of considerable intensity was directed through the uterus, one pole of the battery being applied to the abdominal walls immediately over the fundus, by means of a curved plate of copper, and the other placed in the cervix. Almost immediately firm contraction took place; and, when the current was discontinued after a short time, the uterus remained securely contracted, and no further hæmorrhage took place. The patient made a good recovery.

To those who have often witnessed, as it has probably been the lot of most general practitioners to do, the bustle and confusion and other disagreeable accessories of a case of obstinate hæmorrhage after labor, any means that tends to diminish these inconveniences must be most acceptable. The use of galvanism as a means of treatment in these cases, besides its remarkable efficiency, as shown by the foregoing case, and which might naturally be expected, judging from its action on contractile tissues generally, possesses many other advantages over the means usually employed; for instance, the cleanliness and simplicity of its mode of application, and the avoidance of those evil consequences in the puerperal state which are so apt to result from the irritation of the uterus, and the exposure and deluging with cold water which usually take place. Therefore it is to be hoped that its efficiency may soon become established beyond doubt, and its employment become as general as it deserves to be.

SURGERY.

1.—*The Antiseptic Treatment of Wounds.* By John Wood, F. R. C. S., F. R. S. [British Medical Journal, August 9, 1873.]

We make the following extract from Dr. Wood's address on surgery, before the British Medical Association:

Pyæmia, septicæmia, and erysipelas, are undoubtedly the greatest troubles of modern surgery. Without their baneful influence the success of our improved methods would be enormously increased. By their occurrence the best-laid plans go wrong, and may result in the death instead of the restoration of the patient; and this is more deplorable when, as often happens, the operation is one which is not absolutely necessary to save life, but to remove a disability which might be an ill "better to bear than fly to others that we know not of." When, therefore, a system of dressing wounds is brought before us, sanctioned by worthy names and supported by the results of cases, offering a means of escaping these terrible enemies, it is our bounden duty to give it a fair and full trial.

Such is the antiseptic system of dressing wounds originally developed by Le Maire in 1860 and 1865—in the use of coal-tar, and its derivative, carbolic acid, as an application to wounds. As long ago as 1815, French chemists had proved the antiseptic qualities of oil of tar. As long ago as 1834, Runge discovered carbolic acid and its properties. So slow is the growth of improvement. Coal-tar itself, made into an emulsion with saponine by Le Bœuf, and combined with plaster of Paris by Corne and Demaux, in 1858, has continued to be used by French surgeons, and has lately been employed in combination with charcoal by Beau, of Toulon. A great impulse was given in this country to the use of carbolic acid by Prof. Lister, in February, 1867, well known to the Association from the exposition of his method by that talented surgeon to the meeting at Plymouth. Since that time I have given this system, I believe, a fair trial at King's College Hospital. At the same time, and under the same conditions as far as could be obtained, I have employed the solutions of carbolic acid in oil and water, and those of metallic salts, as well as other antiseptic substances, such as chlorozone, etc., but without the elaborate attempts to exclude the unpurified atmospheric air which Lister deems essential.

I shall not attempt, gentlemen, to discuss the question of atmospheric germs, or of indwelling bacteria-like bodies and their influence upon disease. This question is one of a far wider nature than can be conveniently discussed here, and it involves other departments of medical science besides that of surgery. In common with, and in relation to, the question of suppuration in general, and its connection with tubercle, it can only be solved by the prosecution of those lines of research and pathology and medicine which have been followed so skillfully by Drs. Burdon-Sanderson and Wilson Fox, and which may prove to be converging lines toward an important discovery. As an experimental and scientific mode of research, which may turn out to be also a converging line in surgery, I have the highest possible respect for Prof. Lister's system of treating wounds.

Upon his theory of germs, it is conistent and simple enough; but it is as a practical method of treating open wounds, available under ordinary circumstances in hospitals and private practice, in emergencies, and on the battle-field, that it must be estimated and will ultimately take its place; and it is with that view that I have put it, as far as possible, to the test. I began it at a time when the hospital was in a good hygienic condition, and the cases for that time did admirably. I had some cases quite equal to any described by Prof. Lister himself. I, at the same time, tried the application of dry lint, without any moisture whatever, to the wound, and in many cases, especially in breast-cases, the results were also perfect. In one breast-case union by adhesion occurred throughout the wound. I also tried the application of the chloride-of-zinc solution in the manner originated by Mr. De Morgan, and very good results ensued, viz., healing with the formation of little or no pus. After about six months, there came into the hospital a very unfavorable change, and, from inquiries made at the time, I concluded that a similar condition prevailed in most or all the London hospitals. Erysipelas and its concomitant pyæmia began to show themselves, the former not springing up in the hospital itself, but imported with patients. The wounds now began to suppurate more, primary healing was less common, and the erysipelatous blush appeared with blameworthy impartiality in cases treated in all kinds of ways, and almost as impartially on my own antiseptic side of the hospital as on my colleague Sir William Fergusson's non-antiseptic side. But this I feel bound to say, that there was little or no putrefaction, as evidenced by the odor, in any of my cases, which my eminent colleague shrewdly attributed to the carbolic smell overpowering all others. Upon this point, however, I must say I did not agree with him. I had one case of amputation of the thigh for a tumor of the lower end of the femur, in a man about sixty. I treated it by Lister's method, carefully carried out, and, from beginning to end, there was very little discharge and no putrid or offensive smell whatever; but the wound did not heal, the end of the bone remained unadherent and devoid of granulations, and the man lingered for two months in a declining and emaciated state, and finally succumbed to chronic pyæmia with secondary abscesses in various parts. The occurrence in many other cases similar in character to this has convinced me that the agencies, whatever they are, in pyæmia, operate in the general system, or, if through the atmosphere, in other channels besides the wounded part, as in cases of pyæmic poisoning from deep internal glandular pus-deposits and in other acute and chronic tubercular affections.

Some time afterward I had a case of compound fracture of the tibia and fibula, with a limited aperture in the skin, in a man nearly seventy years of age. I put it up carefully in Lister's method, carbolic-spray, prepared gauze and jaquinette, complete. On dressing it several days afterward, suppuration was found to have occurred, and the pus had accumulated considerably in the dressings. The treatment was continued, and kept the wound free from all unpleasantness, but still the amount of suppuration was very considerable. There was burrowing of pus along the muscles and bones, and a total want of union. In this case I was ultimately obliged to amputate below the knee. The amputation wound was also treated antiseptically, but still the amount of pus was considerable, and, although from the man's age and reduced condition, the progress of healing by granulation was slow, the case did ultimately exceedingly well, and made an excellent stump.

In some cases of psoas abscess treated by Lister's method we had marked success so long as the hospital was healthy. When erysipelas and pyæmia appeared, however, we had others in which the pus in the abscess became putrid and offensive after the first evacuation under the spray and with all the precautions, and I was obliged to make free openings and introduce draining-tubes through which the abscess could be washed out thoroughly with antiseptic. Such cases show that we cannot without danger depart, in the generality of wounds, from the old rule of providing a free exit for all purulent and offensive discharges, and, for the want of this, the exclusion of air is not a sufficient compensation. I cannot, consequently, approve of the plans originated by Baron Larrey and followed by Gosselin, and, more lately, by J. Guerin and Maisonneuve, of "occlusion pneumatique" the amount of resemblance to which, in Lister's method, constitutes, it seems to me, some part of its deficiencies. To a great extent this objection also exists to the plan followed during the second siege of Paris by Alphonse Guerin, of using thick investments of compressed cotton-wool after washing the wound with alcohol, and then leaving it, without disturbance or removal of the deeper layers, for periods varying from a fortnight to two months, or even more. This plan for keeping from the wound injurious atmospheric influences seems to have been deduced from Prof. Tyndall's experiments upon the purifying results of the cotton filter of Pasteur. It was shown by Hervey that, as used by Guerin, it neither prevented putrefaction and fetor in the wound, nor the formation of abundance of microzoa therein. Here, again, we have instances of the propriety of that regular and systematic inspection of wounds which the practice of hermetically sealing them up prevents us from obtaining.

With respect to the employment of cotton-wool combined with due drainage, I look forward with interest to the paper promised for this section by Mr. Callender, who has, he informs me, obtained much success from its use combined with his own form of drainage-tube. Cotton-wool has one great advantage as a dressing in cases of emergency: It is usually easily to be obtained in the necessary quantities after battles and railway accidents, when it is necessary to remove patients directly after injuries or operations; it provides better than most other methods for the protection of the wound or stumps from injury. Tarred oakum possesses all these advantages to an equal degree, and has the superior quality of being also cooler and more antiseptic. Mr. C. Heath, of University College Hospital, tells me that he prefers it to any other dressing, and, in the cases in which I have used it, it has answered admirably. In the free use of cotton-wool as a dressing during hot weather, I have found patients to complain of the heat of the wound or stump. At these seasons I believe oakum to possess a greater advantage. In cold weather cotton-wool is comfortable enough, and affords an admirable elastic support and due compression to the wound; but, in my opinion, it has, if used without antiseptics, one great disadvantage which is shared by charpie and other absorbent applications, and which is increased tenfold when used, as in the French hospitals, for stuffing the interior of wounds and stumps to prevent union by adhesion and to absorb discharges. While kept in the wards in readiness for the dresser, these substances, as proved by the experiments of Chalvet and Reveil, as well as those of Eiselt and Kallman, absorb the infective and putrefactive particles which float about in times of epidemic influences, or as exuviæ in a crowded aggregation of wounded patients, and so may become direct vehicles of communication of local infection. The same may also be said of the water and lint used in the wards for the simple water-dressing. Warmth and moisture without antiseptics are very favorable to the diffusion of contagion. And the risk is increased by the carelessness or thoughtlessness which you cannot entirely eliminate from nurses and dressers in passing from one patient to another.

Prof. Humphrey has informed me that he is quite satisfied with the plan of leaving wounds and stumps uncovered by dressing, and entirely undisturbed, having only the discharges wiped or washed away. I am informed by Dr. Weil, late assistant to Billroth, that this plan is uniformly followed in the large hospital at Vienna. Here atmospheric influences have full local play, aided by the accidental contaminations of water, sponges, or tow; and yet, in the spacious and well-ventilated wards, and pure air, of Addenbrooke's Hospital at Cambridge, the results are far from being unsatisfactory. In a time of bad hygienic influences, epidemic erysipelas, pyæmia, or of an accumulation of wounded patients in a London hospital, it is probable that this would not be the case.

After frequent trials, I have come to consider that a plan comprising the free use of Chassaignac's drainage-tubes passing from the surface of the wound, or from its interior if deep and sinuous, and with their outer extremities embedded in cotton-wool or oakum, well permeated with MacDougall's or Calvert's powder, or other disinfectant and absorbent of discharges; the surface of the wound washed over after bleeding has ceased with a mixture of solutions of chloride of zinc and carbolic acid or sulphocarbolate of zinc; the same solution to saturate the lint, applied in the same way as in water-dressing, and enveloped in thin gutta-percha tissue, the whole supported by strapping and a light bandage, affords the readiest, lightest, coolest, and most generally useful application of the antiseptic method. An outer envelope of cotton-wool or oakum, and dressing every day after the first opening of the primary dressing, complete a method from which I have obtained as good results as from any other that I have tried, and, what is perhaps important, I have found it less difficult to insure its being properly carried out.

From this you will gather that I agree with Mr. Lund's view, as expressed in his able paper of "Observations" as to the general efficacy of antiseptics, and in his position with respect to the germ-theory explanations, although I do not consider the great elaboration of the carbolic or other dressings to be so necessary as he appears to do. I hope to learn somewhat more from his forthcoming paper on the same subject.

In clean incised wounds, where the formation of pus is not likely to occur, as in some plastic operations, the hermetically-sealing plan will no doubt maintain its position in general use in its most useful form of collodion. But, when suppuration ensues, it must be got rid of. Its absorption by dry earth, as advocated by Dr. A. Hewson, of Pennsylvania, has the disadvantage of being dirty and offensive to the patients, and of obscuring by its color the natural appearance of the wound when in contact with it, but, as a substitute when better absorbents cannot be obtained, it seems to be of some value. Much the same may be said of charcoal. When this substance is combined with coal-tar, however, as in the way advocated by Dr. Beau, it would seem that a great part of the antiseptic vapor would be absorbed by the charcoal, and the two remedies to some extent thus neutralize each other.

Erysipelas does not seem to be much influenced by antiseptic measures. Such cases as are recorded by M. Chédevergne as an instance of the detergent power of alcohol as a topical application—viz., of erysipelas appearing upon the body of a patient, but not at all invading the wound itself—have several times occurred to me, and I dare say to most surgeons; and it proves no more than that erysipelas is a constitutional disease; and that, though usually, like scarlatina, when happening to wounded patients, showing itself first at the wounded part, it does not invariably do so. But when

"The life of all the blood
Is touched corruptibly,"

and pyæmic symptoms force upon us the momentous questions, "What should we do to save the patient? and can we do any thing?" the answer which was made to me by a surgeon of experience in a case in which the patient got well, "You can do nothing, it is useless trying," would, I suspect, be given by many. In at least four cases of undoubted pyæmic infection, as evidenced by rigors, exacerbations of temperature, secondary abscesses, and lobular pneumonia, the treatment to which I subjected my patients, with little better hopes at first than those which drift into the law of neglect I have alluded to, was attended with success. They were far from being slight cases; and I had not the advantage of being able to send them away to the benefits of purer air and beyond the reach of hospital influences, as so powerfully inculcated by the teaching of Sir James Paget.

Besides persevering in the antiseptic local treament, and giving free access of fresh air, I surrounded my patient with a highly-antiseptic atmosphere, by placing muslin bags of McDougall's powder around and within the bed, and in abundance about the wound, so that he should both breathe the carbolic and sulphurous vapor, and imbibe it as far as possble through the skin. If the stomach were not feeble or irritable, but able to take abundant nourishment (the primary element of restoration), I also gave three to six grain doses of the sulpho-carbolate of iron, with a view of testing the practice so ably advocated by my friend Dr. Sansom. I took care, as far as possible, not to give the drug soon after nourishment was taken, so as not to interfere with the first stage of digestion, and I discontinued it at once if the appetite fell off, or there was pain after taking it. Three of the cases showed, in from a week to ten days' time, that peculiar slate-colored or olive-green coloration of the urine, the cause of which was attributed, in a description given by me of one of these cases (in 1868), after a chemical examination by the late Prof. Miller, to a modification of the yellow coloring-matter of the urine by the action of the carbolic acid upon it. This curious change was first observed, it is said, by Mr. Berkeley Hill, and has been noticed by Drs. Fuller, Stevenson, and Wallace. These four cases completely recovered; but I am bound to say that in some others, not apparently more serious, but perhaps more insidious, the patients died quite as comfortably as under any other plan, whether officious or let alone in character.

I believe that cases of recovery frequently occur under other methods, or no methods, and that at least as much depends upon the age and reparative power of the patient, the amount of blood-poison formed or absorbed, and the general conditions of the atmosphere, as upon any system of treatment whatever.

I attach much importance, as I have said, to free drainage in dressing wounds, and, when these are made by the surgeon, a good deal more may be done to favor this by a judicious choice of the direction of the incision in resections, etc., and the position of the flaps, etc., in amputations. The plan of making a puncture in the popliteal space proposed by Mr. Jonathan Hutchinson in excision of the knee-joint is one which illustrates my meaning. The wound should if possible be made to slope toward that part which is most dependent when the patient is laid in bed. In amputations of the thigh, I think for this reason that the circular operation is the most objectionable, on account of its forming a hollow, funnel-shaped wound, which, in the necessarily raised position of the stump upon a pillow, holds the discharge like a bucket slightly tilted. Very good drainage is accomplished in the late Mr. Teale's excellent plan of a single square anterior flap. I have practised Mr. Teale's method with the best results in the leg and forearm; but, for other reasons, I prefer in the thigh an oblique double flap, with the outer end of the incision placed lower than the inner, and the front flap placed somewhat outside the limb, and longer than the hinder. After many trials, I am quite convinced that this both gives the most complete drainage, prevents the bone protruding, and makes a very shapely and serviceable stump, with a cicatrix placed well behind the point of pressure. Another important point bearing on this matter in favoring the escape of discharges from the interior of a wound, lies in the manner of securing the arteries. When an artery is twisted in, as in the ancient Roman system, revived by Amassat and Velpeau, and lately tried by Mr. Cooper Forster and Mr. Bryant, or when it is secured by a pin or wire, as advocated by the late Sir James Simpson, and practised at Aberdeen and elsewhere; or when it is secured by an antiseptic catgut ligature, cut off short on the vessel, as revived by Prof. Lister, and tested by Mr. T. Holmes, the theory is, that the wound should heal in the deeper parts as well as in the more superficial, by the direct adhesive process. But this, in the amputation of an extremity, or a large resection, is not the rule, and, moreover, in large cities is not usual. Now, the parts that are most disposed so to heal are the smoothly-cut, self-adapting and vascular tegumentary structures, and these sometimes close up by adhesion, leaving interior cavities, especially about the bone, and between the muscles, containing decomposing blood or pus, which afterward accumulate, burrow, give trouble, and delay the cure, or cause by pyæmia the death of the patient. To prevent this subsequent inconvenience, after experience of it, seems to be the only rational explanation of the continental method still employed of stuffing the whole wound with a charpie, so as to insure healing from the bottom, which seems so strange to our notions. If we could be quite sure that by torsion, metallic or antiseptic ligatures, we could secure complete adhesion throughout, the case would be made very much stronger in their favor. But this is certainly the exception and not the rule. There are other elements at work influencing this, even more powerful than the local treatment. Now, I believe, with my colleague Sir W. Fergusson, that so long as we have this want of entire union, ligature threads may have the advantage of keeping open channels for the escape of discharges from the close neighborhood of the tied arteries, the accompanying veins of which are frequently the sources of effusions of blood after the wound is dressed, and these afterward clot, and may putrefy. The ligature threads I usually have well steeped in carbolized oil, and saturated as so to be unable to absorb discharges, and so utilized to spread around an antiseptic influence. Sometimes in deep narrow wounds I place them within or alongside of a drainage-tube. They can thus be made into channels for the introduction of antiseptic agents to the deeper parts, and this consideration may add to the much greater sense of security given to the surgeon's mind on leaving his patient, arising from the use of a safe knot and a string to remove it by when it has performed its work. There is one point in the section of flaps which may, I think, have influence sometimes upon the introduction of pus or septic matter into the cut veins. When these are cut obliquely with the face of the flap, they are opened in a large conic section in the shape of a pen, and left, when placed on the underlying flap, in an attitude well adapted for receiving and conducting into their interior pus and putrid discharges which gravitate from the surrounding hollow and often funnel-shaped sides. To obviate this, I invariably, after a flap-amputation, cut off the larger veins transversely.

2.—*Extirpation of a Fatty Tumor, weighing Nine Pounds and Four Ounces.* By E. G. Bradley, M. D., of Cotton Plant, Ark. [Medical and Surgical Reporter, August 23, 1873.]

Mrs. C., the subject of the operation, is about thirty-five years old, the mother of five children, sympathetic temperament, always enjoyed uninterrupted health. The tumor was located to the left of the dorsum of the spine, extending from the spine of the scapula to about the ninth rib, occupying an area of about twelve inches in length and eight inches in width. The development of the tumor commenced about five years ago. When it was first noticed it was said not to have been larger than a common-sized marble, and seemed to grow very slowly till about two years ago, and within the last twelve months it grew very rapidly.

I was sent for to see the lady, May 1, 1873, and on the morning of the 2d of May I made preparations to operate. The lady was placed on a table on her right side, with her shoulders slightly elevated. Drs. Stevenson, Grigsbey, and James, were present. Stevenson and James administered the chloroform. I commenced by making a longitudinal incision, beginning above the spine of the scapula, and carrying it down to below the ninth rib, immediately over the centre of the tumor. I then had Dr. Grigsbey to press the tumor on both sides in order to make the incision-gap open. Next I dissected the integuments from the tumor down to the body on both sides. I then sponged the blood out from under the skin, and used Monsel's solution of iron as a styptic, which soon arrested all hæmorrhage that amounted to any thing. I directed my assistant to raise the tumor with his fingers while I dissected it loose from the trapezius muscle, and, after detaching it from its orbit, I lifted it out and ligated four small arteries that were attached to the tumor, and sponged the cavity out with Monsel's solution, drew the edges of the wound together, closed it with interrupted sutures about an inch apart, and ordered a towel wet in cold water to be applied to the wound and repeated every half-hour.

The patient was then roused up from the influence of chloroform and given some brandy-and-water, and placed in bed, reaction taking place in about three-quarters of an hour; pulse rose to 90 to the minute. I ordered one-fourth of a grain of morphia and two grains of quinine to be given every four hours during the remainder of the day and that night. Patient rested very well. As it was about thirty-five miles' distance from my residence to the patient's residence, and no railway conveyance, I left the patient in the care of Dr. E. O. Grigsbey for subsequent treatment.

The third day after the operation I was sent for by Dr. G., he stating to me in a note that my patient was losing too much blood from the wound. I obeyed the summons immediately. On arriving I found my patient very much alarmed, and on examining the wound I found that there was no real hæmorrhage; it was the clot that had formed under the skin of the flaps that was dissolving and passing off through the interstices of the wound. I took a pair of sharp-pointed scissors and cut the stitches, and attempted to open the wound in order to wash it out. On attempting to separate the edges I found that union by the first intention had taken place more than half way of the wound. I ordered some warm water, and, taking a syringe, injected the cavity of the wound thoroughly and washed out all the coagulated blood, and then injected a solution of carbolic acid, tannin, and glycerine under the flaps, and ordered it to be repeated twice daily, also to keep a towel wet with cold water laid on the wound; also ordered a dose of castor-oil to be given, which was done, and her bowels were moved. I then put her on the use of port wine, full diet, iron, and quinine, three times a day, and left her in charge of Dr. James, and at the end of two weeks she was able to walk about the house and sit up during the day; and at the end of six weeks she was as well as she ever was. Meanwhile she nursed an infant about three months old.

3.—*Two Cases of Bayonet-Wounds.* [Lancet, July 19, 1873.]

The following cases came under the care of Mr. W. Colles after the riotous proceedings which occurred in Dublin during a fire, on June 7th, when the military were obliged to clear the streets at the point of the bayonet, and in doing so wounded, among others, the two men whose cases are thus detailed by Mr. William J. Brown, M. B.:

Case I.—George C., a laborer, aged thirty-six years, was admitted at about 2 o'clock A. M., on Sunday, June 8th, suffering from a triangular punctured and incised wound between the lower angle of the left scapula and the vertebral column. The edges of the wound were inverted, and bright arterial blood was gushing freely from it. He complained of a catch in his breathing, and pain below the left clavicle; and, upon examination, an ephysematous swelling was observed at about two inches below the junction of the outer with the inner two-thirds of the left clavicle. This tumor became larger at each expiration, and beads or globules of blood could be observed oozing out on its surface. Upon pressure over the left side of the chest, the peculiar crepitation of emphysema could be heard, and upon applying the stethoscope a blowing sound could be distinguished over the tumor. When admitted he was weak from the great quantity of blood which he had lost, his shirt and trousers being soaked through. He was sober, and was able to give a complete account of the transaction, although he allowed that he had been drinking before the occurrence. Upon causing him to expectorate upon a clean cloth, it was found that his sputa contained clots of blood. The resident dresser on duty, Dr. J. J. Mullen, closed the wound with collodion, plaster, compress, and bandage, and, having had the patient removed to bed, consulted the resident house-surgeon, Mr. A. Colles, M. B., who ordered the patient four grains of lead-with-opium pill every second hour. The pulse was 108; respiration short and rapid. At about 10 o'clock A. M. he was seen by Mr. W. Colles, who ordered him Dover's powder, blue-pill, and digitalis. The patient said that he felt comfortable, and slept well, and did not feel any pain. The chest was not examined, because of the bandages.

June 9*th*.—Pulse 114; temperature 108° (?). Spat up some blood last night. Mr. W. Colles, having seen him, advised the same treatment to be continued. Upon interrogating the patient, he said that when endeavoring to escape arrest he was bayoneted by a soldier, who, after lowering his musket to the right hip, drove the bayonet upward, forward, and outward from right to left through the chest and lungs. The patient stated that upon being stabbed he felt as if a red-hot iron had passed through his body, and immediately afterward blood gushed from his mouth. After being extricated he ran off, and with the assistance of two men reached the hospital.

11*th*.—The emphysema remains, and now there is crepitus under the clavicle as if the rib had been broken. The wound, which was dressed with carbolic acid, strapping, and a compress, looked healthy.

14*th*.—Two grains of quinine were substituted for the blue-pill, and the dose of digitalis reduced from half to a quarter of a grain.

The patient's progress after this time was very satisfactory, and on June 24th he was discharged cured, but instructed to attend as an out-patient. On July 4th he came to the hospital, and was well, with the exception of a little pain in the left hip.

It seems clear that the lung was wounded in this case, and the emphysema was prevented from swelling only by firm compresses.

CASE II.—Michael T., a laborer, aged twenty-three, was admitted at the same time as the former patient. When admitted he was suffering from a bayonet-wound in the left hip, just below the crest of the ilium. The wound was dressed with a spica bandage and compresses. He stated that he was stabbed on running away, and that when he asked the soldier to take out the bayonet he replied that he would drive it farther in, and accordingly drove it completely through the hip, and in withdrawing it twisted it in such a manner as to make a very ugly lacerated wound. Felt no pain except when the bayonet was withdrawn, and when he attempted to move. He felt more pain at night than in the day. The wounds were poulticed.

June 14*th*.—The wounds looked as if about to slough, and the patient complained of feeling weak. He was therefore placed on full diet and porter, and given chlorate of potash and bark, and a sleeping-draught at night. The wounds were touched with nitrate of silver, which relieved the burning pain which they caused.

17*th*.—Some warm dressing was placed in the wound, and the poultices applied as before. After this the wounds healed up rapidly, and he was discharged on June 26th, perfectly well.

4.—*A Report of Five Cases of Colles Fracture, treated after the Plan of Prof. E. M. Moore, M. D.* By B. L. HOVEY, M. D., Rochester, N. Y. [Buffalo Medical and Surgical Journal, September, 1873.]

Mrs. V., aged twenty-four years, was thrown from a carriage, June 19, 1872, and, striking on the palm of the right hand, fractured the radius one inch from the carpal end. Dr. Hutchinson, of Utica, saw this patient with me at the time, and diagnosed the injury as stated.

The fracture was reduced, and held in position by compress, secured by adhesive straps. The patient used the hand in knitting, on the sixteenth day after the injury, and the dressings were removed on the eighteenth day. A perfect cure resulted.

Frank Gauber, aged fifty-eight years, fell from a tree, July 26, 1872, producing a fracture of the inferior maxillary bone and a fracture of the right radius three-quarters of inch above the wrist-joint, with dislocation of the carpal end of the ulna. The patient also had a concussion of the dorsal vertebra, with other severe injuries.

The injury to the forearm was reduced by manipulations, after the plan of Dr. Moore, and secured by compress and adhesive-plaster bandage, in the usual plan of his new method of treating such injuries. On the thirty-fifth day the dressings were removed, and the cure perfect.

In this case the dressings were left on longer than required, except as a caution, on account of the restless state of the patient.

Mrs. A. P. F., of Troy, N. Y., aged about fifty years, fell from a chair while standing on it, September 3, 1872, at the Clinton Hotel in this city, striking on the palm of the left had, fracturing the radius one inch from the carpal end of the bone, and dislocating the ulna at the lower end.

This case was treated as the preceding one, and the patient was sent to her home in Troy on the third day after the injury. The subsequent treatment of the case was rendered by my friend Dr. H. B. Whiton, of that city.

The result of the cure was perfect, as is shown by a letter I have received from the doctor, under date of September 27th. He says, "Your case of Colles fracture has resulted in a perfect cure and this day I removed the dressings." You will observe that the cure was completed on the twenty-fourth day after the injury. The doctor further says in the letter referred to: "I was on the business committee of the State Society when Dr. Moore read his paper, and am glad to have seen this and other cases confirming his simple and beautiful treatment; I think many, who have not seen such perfect cures result from other modes of treatment, would be tempted to deny that there had been a fracture."

A lad, aged thirteen years, while at play with his fellows, fell from an eminence, striking on his hands. He was immediately brought into my office, and the injury readily discovered. The right radius was fractured nearly one inch above the wrist. The evidence was slight crepitus, deformity, and pain.

The treatment was reduction, secured by compress and adhesive plaster. This lad suffered but little from the injury, and on the fourteenth day the dressing was removed and the cure perfect.

September 26, 1872, Mrs. W., aged over sixty years, received a blow, striking the left forearm on the posterior side two inches above the wrist, fracturing the radius at that point. Severe inflammation of the joint and hand followed the injury. Then very extensive swelling, redness, and pain, which continued two weeks in an acute degree. The fracture after the reduction was treated after Dr. Moore's plan, and the union is perfect without deformity, though up to this time the patient has been unable to use the hand. The result of this case is due more to the inflammation than to the fracture. The inflammation of the hand was of a subacute form, and presented a different appearance from that usually seen in those cases of Colles fracture which terminate in deformity or an imperfect cure. The hand is puffy and tender, though there is perfect mobility of all the joints by manual force.

I am fully convinced by my own experience of the value of the simple and effective treatment presented by Prof. Moore.

Translations.

Elephantiasis. Treatment by Ligature.—Dr. Manduel publishes, in the *Lyon Médicale*, a *résumé* of all the cases of elephantiasis treated by ligature of the main artery of the affected part. This operation, introduced by Carnochan, of New York, has been performed twenty-three times, viz.: on the femoral artery fifteen times, on the external iliac three times, on the anterior tibial twice, on the two carotids once, the brachial once, and in one case the artery is not mentioned. The success attendant upon the operation has been thus tabulated: one died of pyæmia; in two cases, a negative result; four were attended by a speedy relapse; six were relieved, and eleven cured. The number recorded as cured is probably inexact, inasmuch as patients suffering from this disease are exceedingly prone to a relapse, and require to be kept under observation several years before the degree of success can be estimated.

Compression, which has the advantage of being comparatively harmless, has succeeded in some cases. Dufour has reported several. Vanzette, of Padua, records a case of a young girl in whom the disease attacked the right leg. Complete success followed compression, and at the time the case was reported, three years afterward, the patient remained perfectly well. Quite recently Gosselin attempted the same treatment, but without favorable result.—*Lyon Médicale*, December 22, 1872.

Dilatation of the Stomach.—M. Leven related, before the Société de Biologie of Paris, two cases of dilatation of the stomach. The subject of the first case was a man, who vomited every day over five pints of liquid. He had become exceedingly emaciated, and was supposed to be suffering from cancer of the stomach. M. Leven evacuated the stomach, after the method of Küssmaul, by means of an œsophageal tube and an exhausting syringe. He obtained at first from five to three and a half pints of fluid daily. This quantity gradually diminished to one-half a pint, and at the same time the patient gained perceptibly in flesh and strength. The liquid was acid, rich in salts and organic matter, but possessed no greater digestive power than any slightly acid fluid. This fact was proved by submitting meat to its action in a warm atmosphere. The dilatation of the stomach, which was enormous, gradually diminished.

The second case was similar, except that the fluid was neutral as to reaction.

Traube, in a case of simple ulcer of the stomach with dilatation, regarded the dilatation as due to the paralyzing action of the ulcer on the terminal filaments of the pneumogastric nerve, but M. Leven was unable to determine the existence of an ulcer in either of these cases.—*Le Mouvement Médicale*, February 1, 1873.

Lead-Poisoning from a Hair-Dye.—Dr. Crocker reports the following: During the month of February, R. W., aged fifty-five years, applied to him for relief from pains, similar to those which characterize muscular rheumatism. In addition to pains in the deltoid and other muscles of the shoulder, he suffered from partial paralysis of both arms. The disease appeared to yield under the influence of simple remedies, but later it was noticed that there was almost complete paralysis of the extensors of the fingers. The patient could seize objects forcibly, but found a difficulty in letting them go. As he had suffered for several years from occasional attacks of colic, his gums were examined, but no metallic stain could be seen. After the water of the dwelling had been tested and the kitchen utensils suspected, it was found that he had, for the last fifteen years, made use of a hair-dye, which he prepared himself, as follows: To one pint of water, add one teaspoonful of acetate of lead and three teaspoonfuls of sulphur. This he was accustomed to use at least once a week. This lotion was interdicted, and, under the influence of iodide of potassium and electricity, he made a good recovery.—*Union Médicale.*

Tannin in Empyema, after Artificial or Spontaneous Evacuation of Pus.—M. Duboué (*Gazette Hebdomad.*), after a trial of several years, recommends the employment of this remedy as a valuable auxiliary to the treatment of pleurisy after thoracentesis, particularly in the purulent variety. Tannin acts as an astringent, diminishing the purulent secretion and the diarrhœa) which is a frequent complication), as a tonic; and finally, in cases with hæmoptysis, it is known that tannin is one of the most useful remedies. In eleven cases of purulent pleurisy (without tubercles), M. Duboué has had eight complete successes, one incomplete success, and two deaths. The duration of the treatment may occupy two, three, and even six months. The dose of tannin varies between 0.75 grain and 1.50 grain.—*Mouvement Médicale*, 1873.

Opacities of the Cornea.—M. Ansiaux, Professor of Clinical Surgery in the University of Liege, employed with success the following:

℞. Cadmii sulphat., gr. j.
Mucilag. gum-acaciæ,
Tr. opii (Sydenham), āā ʒ ij.
M., et ft. collyr.

The dose of cadmium should be increased, if it is well tolerated, and may be carried even to twelve grains, though this is rarely necessary, in the author's experience. The collyrium should be applied, by means of a small brush, two or three times a day, and the patient directed to close the eye for ten minutes after its application, in order that the lotion may not be carried off by the tears. Laudanum having been proposed for the cure of these opacities, one might attribute the numerous cures of Prof. Ansiaux to its use in the prescription, but the exclusive use of laudanum has not been followed by the same success.—*La France Médicale*, February 26, 1873.

Venom and Ferments.—The natural aversion of the human species for the serpent tribe is not likely to be neutralized in India, for M. Fayer, professor in the Medical College of Calcutta, estimates the number of victims, destroyed by the venomous serpents, at about twenty thousand annually. M. Dumas, who has recently analyzed the venom of the cobra, which consists principally of albuminoid matter, has observed a striking analogy between the venom of this species and the ferments.—*La France Médicale*, March 12, 1873.

The Absorption-Spectra of Blood. By VICTOR FUMOUZE, M.D. Paris, 1871, 4to.—First, is given a description of the instruments employed, which may be omitted. A brief *résumé* of the description of blood and its coloring-matter is given.

Hemoglobine.—The red globules of the blood of vertebrates are essentially composed of a coloring-matter, hemoglobine, impregnating a stroma formed of albuminous substances, of a small quantity of lecithine (phosphorated material), of cholesterine, and of phosphate of potassa. Besides the solid principles, the globules contain a quantity of water equal to two or three times the weight of the latter. The hemoglobine forms by itself nine-tenths the weight of the solid constituents of the globules.

The blood of certain invertebrates seems to contain likewise hemoglobine, which is then dissolved in the plasma.

Hemoglobine can be extracted in an amorphous condition from the blood of all the vertebrates; it is obtained crystallized from the blood of the dog, cat, urchin, hamster, Guinea-pig, rat, owl, etc.

Water, alcohol, ether, chloroform, the alkaline salts of the biliary acids, congelation and electric discharges, destroy the blood-globules and liberate the hemoglobine. Acids and alkalies destroy the blood-globules, and also liberate a coloring-matter; but this coloring-matter is only one of the products of decomposition of the hemoglobine.

By adding to a drop of defibrinated blood one or two drops of alcohol diluted with water, crystals of hemoglobine are obtained in sufficient quantities to examine with the microscope.

This substance may be prepared as follows: 1. Isolate the red globules by adding a solution of salt to defibrinated blood. 2. Destroy the globules, and liberate the hemoglobine, by the action of water and ether. 3. Crystallize the hemoglobine by adding to the filtered aqueous solution, obtained by the previous methods, a quarter of its volume of alcohol. The crystallization must be repeated several times if it is desired to obtain the hemoglobine pure. The preparation must be made at a low temperature.

All the crystals of hemoglobine heretofore observed belong to the rhombic system, except those of the blood of the squirrel, which relate to the hexagonal system.

Hemoglobine is slightly soluble in all the reagents. Water dissolves some hundredths of its weight, more or less, according to the temperature. Alcohol does not dissolve it; alcohol diluted with water dissolves a small quantity. Glycerine dissolves it very well. Solutions of albumen, when very dilute, and very dilute alkaline solutions, dissolve hemglobine better than pure water. Urea, cane-sugar, sugar-of-milk, and grape-sugar, favor its solution in water. The fluids of the system also dissolve it, but they change it quickly. In all other solvents it is insoluble.

The formula of hemoglobine is not yet positively determined. It contains carbon, hydrogen, nitrogen, oxygen, sulphur, iron, phosphoric acid. It fixes, besides, a certain amount of oxygen, independently of its oxygen of constitution.

Hemoglobine is the only substance of the blood containing iron. The quantity of this metal in one thousand parts of blood is, according to Nasse, 0.555 gramme. Allowing the whole weight of blood to be five kilogrammes, it contains three grammes of iron.

The hemoglobine might be considered an albuminoid substance, properly speaking, but a large number of reagents decompose it into albumen, and another coloring-matter, hematine, which contains all the iron. This decomposition occurs chiefly under the influence of heat, acids, alkalies in concentrated solution, absolute alcohol, and certain metallic salts.

Physiologically the property of hemoglobine, which surpasses all others in importance, is its property of absorbing or giving off oxygen with great facility. In contact with air it absorbs a quantity of oxygen, which may amount to 1.3 centimetre per gramme of hemoglobine. Reducing agents remove easily the greater part of this oxygen; then in contact with air it absorbs a new quantity of the gas.

The hemaglobine containing absorbed oxygen is called oxyhemoglobine, or oxygenated hemoglobine. When this oxygen is removed it is spoken of as reduced, and called reduced hemoglobine. The oxygenated hemoglobine has a bright-red color of arterial blood; reduced hemoglobine is dichromatic; green in thin layers; deep red by reflected light, or when examined in thick layers by refracted light.

Hemoglobine is characterized chemically by its extreme instability; it is decomposed, at the ordinary temperature, into hematine and albumen.

It combines with oxide of carbon, binoxide of nitrogen, acetylene, and hydrocyanic acid. All these combinations crystallize under the same form as the hemoglobine, and differ from it but slightly.

Hemoglobine is not the only coloring-matter which can be obtained from blood. When that liquid is treated by reagents capable of decomposing the hemoglobine into hematine and albuminous substance, hematine is obtained and not hemoglobine. Hematine or hematosine was for a long time thought to be the coloring-matter of the blood, because the first experimenters treated blood with agents which destroyed the hemoglobine.

Products of transformation intermediate between hemoglobine and hematine are found. The latter substance requires for its formation contact with air. If hemoglobine is treated by alkalies or acids excluded from the air, a substance different from hematine is formed (hemochromogenous substance?), which, on coming in contact with air, is itself changed into hematine.

Hematine. $C^{34}H^{34}N^{4}FO^{5}$ (?).—This is an uncrystallizable substance, of a bluish-black color, with a metallic lustre, formed either by the spontaneous decomposition of the blood or of its coloring-matter, or by the action of physical or chemical agents on the hemoglobine, or on the blood itself.

The quantity of hematine which can be extracted from hemoglobine does not exceed four per cent.

Hematine is insoluble in water, alcohol, ether, and chloroform, very slightly soluble in aqueous solutions of the acids, and very soluble in alkaline solutions, or in alcoholic solutions of the acids.

Solutions of hematine can be obtained by treating defibrinated blood directly with acid or alkaline solutions. The alkaline solutions of this substance have a brown-red color in thick layers, and green in thin layers; they are dichromatic. The acid solutions have a brownish-red color for all thicknesses; they are monochromatic.

Hematine is decomposed above 108°. It is decomposed neither by acid solutions nor by alkaline solutions. Sulphuric acid changes it into hematine, *without iron*. Ammonia, hydrocyanic acid, and hydrochloric acid, form combinations with hematine. Hydrochlorate of hematine or hemine is formed by the action of acetic acid and chloride of sodium on blood.

The crystals of hemine have the form of rhomboidal lamellæ, and do not at all resemble the crystals of hemoglobine, called also blood-crystals. They are insoluble in water, and scarcely soluble in alcohol and ether. Alkalies and alkaline carbonates, and acids in alcoholic solution, dissolve them easily.

Hemine is insoluble in cold acetic acid, which explains the ease with which it crystallizes in that acid, previously warmed so as to dissolve it, and then cooled.

Alkaline or acid solutions of hemine have the same optical characters as the solutions of hematine.

Hemine is decomposed above 200°, giving off prussic acid. Treated with sulphuric acid, hydrochloric acid is disengaged.

Spectra of Hemoglobine Solutions.—Oxygenated hemoglobine or of defibrinated blood gives an absorption spectrum characterized by the presence of two dark bands between D and E. The narrowest and darkest is situated near D; and the second, larger but less intense, is very near the line E of Frauenhofer. These bands are still visible in spectra obtained with solutions holding only a ten thousandth of their weight of hemoglobine (Hoppe-Seyler).

The red part of the spectrum appears first, the violet rays appear last. In very dilute solutions, the violet region of the spectrum remains slightly obscure.

Non-defibrinated blood, defibrinated blood, diluted or not with water, solutions of hemoglobine or the crystals of that substance, blood dried in thin layers, and blood seen through the transparent membranes of living animals, give the spectrum of oxyhemoglobine. This spectrum is seen also with the blood of certain invertebrata (earth-worm, larva of chironomus, etc.).

Under the influence of certain reducing agents, such as ammoniacal solutions of tartaric acid and sulphate of protoxide of iron, tartaric acid and protochloride of tin, hydrosulphide of ammonia, etc., oxyhemoglobine loses its oxygen and passes into the condition of reduced hemoglobine, a transformation which is marked by a change of color. The solutions of reduced hemoglobine have the color of venous blood, and are dichromatic.

The absorption-spectrum of this substance offers only one dark band, covering a great part of the space D E, and on the left extending beyond the line D of Frauenhofer. The spectrum of reduced hemoglobine is distinguished, besides, from that of oxygenated hemoglobine, by a less absorption of the blue and violet rays, and a greater absorption of the red rays. By agitation, in contact with air, reduced hemoglobine absorbs oxygen anew, and the spectrum of oxygenated hemoglobine replaces that of the reduced (Stokes).

Venous blood has a spectrum intermediate between the two preceding. The two dark bands of oxygenated hemoglobine are seen separated by an obscure interval, and the region corresponding to the red rays is also obscured from B to C. These appearances are due to the presence in venous blood of imperfectly-reduced hemoglobine.

Hemoglobine combines with the oxide of carbon, taking a bluish-red color. The spectrum resembles very much that of oxygenated hemoglobine, only the two dark bands have a slightly different position; they are situated more to the right. This spectrum is especially distinguished by the persistence of the two dark bands after the addition of a reducing agent to the solution of hemoglobine—C O (Hoppe-Seyler).

Binoxide of nitrogen forms with hemoglobine a combination still more stable than the preceding. This gas expels even oxide of carbon from its combinations with hemoglobine. The spectrum presents two dark bands quite similar to those of hemoglobine—O, but it is not modified when the solution is treated by a reducing agent (Hermann).

Prussic acid forms with hemoglobine a stable combination, of which the solution has a cherry-red color. The spectrum is the same as that of oxygenated hemoglobine. The bands disappear when the solution is treated with a reducing agent (Hoppe-Seyler).

Cyanogen seems also to combine with hemoglobine. The

spectrum seen in such case is quite similar to that of hemoglobine—C D. The reducing agents do not change this combination; the two dark bands do not disappear (Lankester).

Spectra of Hematine.—To examine the spectra of hematine, pure hematine or hydrochlorate of hematine (crystals of hemine) may be dissolved in the alcoholic solution of acids, or in the aqueous solutions of alkalies; it is sufficient, generally, to treat solutions of hemoglobine directly with an acid or an alkali. In the latter case hematine is formed little by little, and remains in solution with a certain quantity of undecomposed hemoglobine.

The spectrum of acid hematine shows a rather dark band at the level of the line C of Frauenhofer. Beyond this band Stokes has noticed two others near the line E of Frauenhofer, and on the left half of the space b F. Thudicum has described two others still on each side of the line D of Frauenhofer. The addition of ether or alcohol to the acid solution causes these bands to appear clearly enough.

If a sufficient quantity of alkali is added to the acid solutions of hematine, or if solutions of blood are treated directly with an alkali, the solution has a brownish-red color in thick layers, and green in thin layers; it is dichromatic. The spectrum shows a large diffuse band occupying the greater part of the space C D, and extending to the right beyond the line D of Frauenhofer.

Under the influence of reducing agents, hematine undergoes a peculiar change which seems to affect the constituent elements of its molecules; it seems to fix hydrogen and lose iron. Hematine undergoes this change only when it is dissolved in alkalies.

The spectrum of reduced hematine shows two dark bands: one nearly in the middle of the space D E b; and the other, narrower and less intense, is traversed by the line E of Frauenhofer, almost at equal distances from its two ends (Stokes).

Reduced hematine, agitated in contact with air, passes again into hematine; but it undergoes a new change, the nature of which is not yet settled. The phenomenon is without doubt complex, for the appearances noticed in the spectrum are not always the same. Some think the reduced hematine passes anew into oxygenated hematine (Stokes), an opinion which is not now admitted; according to Hoppe-Seyler, the bands of absorption of reduced hematine, agitated in contact with air, disappear, but are not replaced; according to others (Nawrocki), reduced hematine is not changed immediately on contact with the air, but may pass slowly into oxygenated hematine.

Hematine treated with sulphuric acid, and then with water, throws down a precipitate which has many analogies with itself, but differs, by the absence of iron, from its constituent elements (Hoppe-Seyler). This fact is disputed by Thudicum.

The spectrum of hematine without iron, dissolved in a very weak solution of soda, is divided by four dark bands; the first faint, in the middle of the space C E; the second, large and deep, is crossed by the line D of Frauenhofer, beyond which it passes on the right by a space equal to two-fifths the space D E, and on the left by a space equal nearly to one-fifth the space C D; the third band, faint, occupies the fourth division in the space C D, supposing it divided into five equal parts; the fourth, equalling the second in intensity and extent, occupies on the right of b three-fifths of the space b F, and extends on the left of b one-third of the space E b (Hoppe-Seyler).

The solution of this same substance in sulphuric alcohol gives another spectrum. Only two bands of absorption are noticed; one occupying the right end of the space C D is very slightly marked, the other very dark, is nearly in the middle of the space D E, equal very nearly to a third of the space (Hoppe-Seyler).

Thudicum obtains, by the action of the sulphuric acid on hemoglobine, a substance which he calls cruentine, giving spectra with multiple bands.

Combination of hematine with hydrochloric acid (hydrochlorate of hematine or hemine) gives the same spectrum as hematine itself.

Solutions of hemoglobine or of hematine submitted to the action of hydrocyanic acid or of cyanide of potassium, at a temperature of 40°, take a reddish-brown color, and give a spectrum characterized by a band of absorption badly limited, covering the space D E in almost its whole extent. This band resembles very much that of reduced hemoglobine. It is, however, distinguished by the position of its darkest portion, which is nearer the line E of Frauenhofer than the corresponding band of reduced hemoglobine. This spectrum should be attributed to a combination of hematine with hydrocyanic acid. In the case where cyanide of potassium is used, perhaps this salt itself enters into combination with the hematine (Hoppe-Seyler).

The solutions of hematine (H Cy) are modified by reducing agents. The spectrum of reduced hematine (H Cy) resembles very much that of reduced hematine. Yet the position of the two bands is not the same in these two spectra. They are more to the left in the spectrum of reduced hematine—H Cy. Besides, the second band, on the right, of the spectrum of reduced hematine (H Cy) is larger and darker than the corresponding band in the spectrum of reduced hematine.

Solutions of reduced hematine (H Cy), agitated in contact with air, absorb oxygen, and the spectrum of hematine—H Cy—reappears. These spectra have been very well described by Preyer.

Cyanogen, which at first combines with hemoglobine, changes it by prolonged action into hematine (H Cy), which is due, according to Lankester, to the formation of hydrocyanic acid at the expense of the cyanogen and the action of that acid on the coloring-matter. Perhaps it is the cyanogen itself which, after combination with hemoglobine, decomposes it and forms a new combination with the hematine resulting from this decomposition.

Products of Transformation intermediate between Hemoglobine and Hematine.—Methemoglobine crystals of hemoglobine, like its solutions, change gradually, taking a brownish tint. This spontaneous change is as yet imperfectly known; some authors see in it only a slow decomposition of hemoglobine into albuminous substance and hematine.

Solutions of hemoglobine thus modified give a spectrum on which the two bands of oxyhemoglobine are still seen, but with them a new band is seen in the space C D, nearer C than D.

Action of some Substances on Hemoglobine.—The band of absorption of acid hematine, always near the line C, may extend beyond that line more or less to the left, according to the acid. The band of absorption of alkaline hematine occupies nearly always the same position, whether the hematine is dissolved in ammonia, potassa, or soda. A certain number of salts, while decomposing hemoglobine, give likewise solutions of hematine having different spectra.

Sulphuretted hydrogen and the alkaline sulphides exercise a special action on hemoglobine. Sulphuretted hydrogen decomposes hemoglobine only in contact with the air; it gives it a greenish color, and at the same time is seen on the spectrum a band of absorption placed between C and D, together with the two bands of hemoglobine which persist.

Sulphate of ammonia, or the alkaline sulphides, added in small quantities to the solutions of hemoglobine, simply reduce them. If the action is prolonged, or if the quantity of sulphide employed is greater, a decomposition occurs marked on the spectrum by a dark band between C and D, the position of which is exactly the same as that of the band of the sulphide of the acid hemoglobine. This band of absorption, at first very faint, becomes more and more marked, and, at the same time, the band of reduced hematine appears. Finally, if the action of the sulphide continues, the spectrum is replaced by the spectrum of reduced hematine.

The phosphorated, arseniated, and antimoniated hydrogens are reducing agents of the hemoglobine. Bile and urine decompose it.

Conclusions.—Among other conclusions which are not in accordance with the objects of this JOURNAL, are a few bearing upon the medico-legal aspects of the subject.

When it is desired to discover traces of blood in liquids or in dried stains, the spectroscope may be of great assistance; thus there are cases where the microscope can furnish no accurate indication in stains of dried blood, nor will the reaction of Teichmann give any more satisfactory results. In these cases the microspectroscope will show the presence of the coloring principle of the blood. If the stain is old, it is not the spectrum of hemoglobine, but that of hematine.

Asphyxia by obstruction to respiration, or by respiration of carbonic-acid gas, produces an accumulation of carbonic acid in the blood, which expels the combined oxygen from the hemoglobine of the blood-corpuscles, without itself combining with these elements. The hemoglobine undergoes a complete reduction. To examine such blood by the spectroscope, care must be taken to exclude the air, or a syringe which produces a complete vacuum will draw out the blood without allowing contact with the oxygen of the air. In such a case the spectrum of reduced hemoglobine is seen.

In case of asphyxia by oxide of carbon, the blood is of a deeper blue, and gives the spectrum of hemoglobine (C O), which, though very little different from that of hemoglobine, O, is very easily distinguished, by the fact that it is not changed by reducing agents.

The combination of hemoglobine with prussic acid could not explain in any way the frightful action of this poison; but, in cases where the action is slower, the formation of that combination may contribute to the production of the phenomena of asphyxia.

Hydrosulphuric acid exercises a peculiar action on hemoglobine, which cannot be precisely defined. At any rate, blood treated by this acid gives a special spectrum.

Miscellany.

Appointments, Honors, etc.—Dr. David P. Smith, of Springfield, Mass., has been appointed Professor of the Theory and Practice of Medicine, at Yale Medical School. In the catalogue of the medical department of Syracuse University are to be found the names of several lady students. Dr. W. Weir Mitchell was honored by a complimentary dinner by his professional brethren in Philadelphia on his recent return from Europe. At a late sitting of the Paris Academy of Medicine, Prof. Hirtz, formerly of the Faculty of Strasbourg, was elected a member. Dr. Braxton Hicks, of London, has so nearly recovered from his severe illness, caused by an infectious wound, that he will return speedily to his ordinary duties. Lidia Rodelrena, a wealthy Russian lady, has just presented to the St. Petersburg Academy of Medicine $40,000 to endow a department for the medical instruction of women. Mr. John Stuart Mill bequeathed £3,000 to any one university in Great Britain or Ireland that shall be the first to open its degrees to women, and to the same university a further sum of £3,000 to endow scholarships for female students exclusively. M. Littré, the French lexicographer, who has just completed his "Dictionary of Medicine, Surgery, and the Allied Sciences," is suffering from a malady which it is feared will shortly prove fatal. The Russian lady medical students have been refused permission to study medicine at the Universities of Strasbourg and Giessen by the authorities of those institutions. On September 8th, Prof. Hughes Bennett, of Edinburgh, was elected corresponding member of the National Academy of Medicine of France. He received twenty-eight votes, and Prof. Van Benedin eight. A memorial to Von Graefe is proposed in London.

Convention of Southern Army Surgeons.—A circular has lately been issued "to the surgeons (field and hospital) of the armies of the late Confederate States," calling a convention to meet in Atlanta, Georgia, May 20, 1874. Its object is the advancement of science—"to rescue from oblivion all the important medical and surgical facts developed within the armies of the Confederate States during the late war." Since the war, many of the most talented of the medical staff have died, and their valuable experience been lost to the profession. The circular further states: "For the success of this great scientific and historical association it is earnestly recommended that the ex-Confederate surgeons of each of the Southern States at once take such steps as will secure a large delegation. The coöperation of the medical staff of the late Confederate navy is respectfully solicited. Besides the contributions to science, the social features of this organization—the revival of old army associations—will be of no secondary interest." This call is based not only upon the action of the Georgia Medical Association, but on the solicitations of many Confederate surgeons throughout the South.

Devotion to Science.—A remarkable instance of devotion to science occurred in the case of Dr. Otto Obermeier, who died in Berlin, August 19th, from cholera. For several months he had been engaged in examinations of blood in typhus fever, and later, in researches on cholera. He was in the habit of keeping in his bedroom specimens taken from patients who died of cholera and also portions of their excreta. When aware of his condition he made several microscopic examinations of his own blood, although death followed in a few hours.

A Cremation Club.—The *Lancet* learns that a club has been formed at Hamburg for promoting the practice of incineration instead of burial. The club is said to number eighty members, each of whom on entering makes a will directing the disposal of his body after death.

A Triumph of Art.—Boston stands preëminent in the production of exquisite and wonderful optical instruments. Mr. Tolles has just achieved the great result of producing a $\frac{1}{75}$ objective for microscopic uses, a glass of such difficult construction that we believe no optician has ever attempted it before. The power of this objective is such that a single white blood-corpuscle covers the entire field of vision. Mr. Tolles has produced two of the finest $\frac{1}{50}$ objectives ever constructed, one of which is in this city, the other in the hands of a Western gentleman. The angular aperture of one is 120°; that of the other, and the last constructed, is 165°.

The objectives are of great excellence, and, in the opinion of competent microscopists, far surpass in defining power and clearness of field those of European make.—*Boston Journal of Chemistry.*

Increase in Consumption of Horse-flesh in Paris.—During the first six months of 1867 there were consumed 893 horses, asses, and mules, furnishing 166,030 kilogrammes of meat. For the first six months of 1870—i. e., prior to the war—the animals were 1,992 in number, giving 366,440 kilogrammes. For the corresponding period in 1873, 5,186 animals have been butchered, furnishing 883,840 kilogrammes, without counting the heart, liver, brain, tongue, etc., which are consumed like those of oxen. The same progress has been made in the consumption in the provinces. The horses are bought for this purpose at from 120 fr. to 150 fr. each, this new industry having increased the value of horses that are worn out, but not diseased, by more than 100 fr.—*Union Méd.*, August 26th.

Massachusetts Medical Society.—At the late annual meeting of this Society, the following officers were elected for the ensuing year: President, Dr. G. C. Shattuck; Vice-President, Dr. E. Cotting; Corresponding Secretary, Dr. C. W. Swan; Librarian, Dr. D. H. Hayden; Treasurer, Dr. F. Minot; Orator, Dr. Nathan Allen; Anniversary Chairman, Dr. R. L. Hodgdon; Committee of Arrangements, Drs. R. Amory, A. H. Nichols, C. J. Blake, T. Dwight, Jr., J. C. Warren.

Drs. Wm. Bushnell, Milton Fuller, Herman L. H. Hoffendahl, Geo. Russell, Israel T. Talbot, David Thayer, and Benjamin H. West, were expelled from the Society for irregular practice.

Pregnancy in the Aged.—Dr. Meynert has communicated to us the following case which has fallen under his own observation: A lady died at the age of eighty-five years, having had four accouchements. The first took place at the age of forty, the second at forty-eight, the third at fifty-one, and the fourth at fifty-six. Five girls were born, of whom three are still living, the two twins being seventy-seven years old, and the youngest child seventy-one years. These three persons, the two eldest of whom have been married and have several children, still enjoy the most excellent health.—*Lyon Médicale.*

A Timely Gift.—Dr. Edward Wigglesworth has given his large collection of models of diseases of the skin and of syphilis, made by Baretta, of Paris, to the medical school of Harvard University. The models are exquisite imitations of disease. This generous and very valuable gift furnishes the departments of dermatology and syphilis with additional means of illustration, such as no other school in the country possesses. The collection has been placed in the museum at the medical college, where it may be seen by physicians.—*Boston Medical and Surgical Journal.*

Lead in the Excretions.—M. Mayençon, as the result of a series of investigations, comes to the following conclusions: 1. The salts of lead are not absorbed by the skin. 2. They are absorbed very slowly, and in very small quantities, by the intestine. 3. The absorbed lead seems especially to impregnate the liver and spleen. 4 Sometimes, after long-continued use of these salts, the kidneys and urine contain traces of lead. 5. Its elimination is prompt and complete, and evidently takes place by the liver.—*Lyon Médicale,* March 30.

Obesity a Cause of Uterine Diseases.—Dr. H. Kirsch, of Prague, lately examined 214 stout women with the view of determining how far obesity is a cause of uterine diseases. He found menstrual irregularity in 208 cases; of these, 146 had leucorrhœa, 56 had chronic metritis, 47 suffered from hysteria, 48 were sterile, 39 had anteflexion and anteversion of the womb, and 11 had retroflexion. Dr. Kirsch recommends a mild course of "Banting" combined with the waters of Carlsbad in the treatment of obese females.—*Lancet.*

Proposed Monument to Eustachius.—The city of Sanseverino-Marche, in Italy, has resolved to erect a monument to its greatest citizen, Bartholomew Eustachius, the great anatomist, philosopher, and physician of the sixteenth century.* Subscriptions will be received at the office of the *Annali Universali di Medicina*, Milan.

Medical Society of the County of New York.—At the annual meeting of this Society, held October 27th, the following officers were elected: President, Ellsworth Eliot, M. D.; Vice-President, Henry B. Sands, M. D.; Recording Secretary, Alfred E. M. Purdy, M. D.; Corresponding Secretary, Frederick A. Castle, M. D.; Treasurer, Joseph E. Janvrin, M. D.; Censors, A. H. Smith, M. D., J. C. Peters, M. D., G. M. Smith, M. D., A. Jacobi, M. D., H. T. Hanks, M. D.

Obituary.

Prof. Czermak, the celebrated physiologist, died at Leipsic, September 15, 1873.

Auguste Nélaton, the renowned French surgeon, died in Paris, on the 20th of September, of disease of the heart. Nélaton was born June 17, 1808. He was a student of medicine under Dupuytren, and obtained the degree of doctor of medicine from the University of Paris, in 1836. He was elected Professor of Clinical Surgery in the university in April, 1851, and in 1856 was admitted to the Academy of Medicine in the section of Chirurgical Pathology. Decorated with the Legion of Honor, in 1848, he was promoted to the rank of officer June 16, 1856, and to that of commander on the 24th of January, 1863. He won great praise by his successful use of the porcelain-tipped probe in the case of Garibaldi, and in

1868 he was created Senator by the Emperor Napoleon His chief publications were: "Tubercular Disease of the Bones" (1836), "Tumors of the Breast" (1839), "Operations for Cataract" (1850). His most voluminous contribution to medical literature was his treatise on surgery ("Éléments de Pathologie Chirurgicale," in five volumes, 1844–1860), which became one of the text-books of the French medical student; only the first three volumes were written by Nélaton, the last two being due to Jamain. His clinical lectures have not been published collectively in his own country, but an American translation was published in Philadelphia in 1855, by Dr. W. F. Atlee; the volume contains notes of lectures given in 1851, 1852, and 1853, and embraces a great variety of subjects.

Dr. Dixi Crosby, for thirty-two years Professor of Surgery in Dartmouth College, died at his residence in Hanover, N. H., September 26, 1873. Dr. Crosby was born February 7, 1800, at Sandwich, N. H., of pure New England stock—strong in the best Puritan element, where self-reliance, love of justice, and unbending will, formed the basis of character and the mainspring of action. His father's father was a captain in the Revolutionary army, and served with two of his sons at the battle of Bunker Hill. His maternal grandfather (Hoyt) was one of Washington's body-guard, and later in life a judge of some distinction. His father, Dr. Asa Crosby, was a surgeon of eminence in Eastern New Hampshire. At the age of sixteen years he entered the academy at Gilmanton, and in his leisure hours acted as clerk in the village store. Three years of this experience developed a commercial taste in the lad, and an ambition to become a successful merchant. With this view, at the age of nineteen years, he came to the city of New York, to enter upon a commercial life. The confidence of his employer was early won, and young Crosby was sent by his firm to New Orleans to take charge of a consignment of goods. On arriving at New Orleans, he learned that the consignee had died of yellow fever. The venture failed, and the young man found himself without friends or resources, a stranger in a distant and fever-stricken city. Yielding to no discouragement, he induced a shipmaster, whom he met, to bring him to New York, where he was thankful to arrive in safety, if not in triumph. The disastrous termination of his first commercial venture changed at once the whole course of young Crosby's life. He gladly made his way back to his home in Gilmanton, and at once entered upon the study of medicine in the office of his father.

The practice of a country doctor in New Hampshire of course embraced every department and variety of professional work. But surgery offered to young Crosby a special charm, and the ardor with which he threw himself into this branch of the profession showed early fruits. From the day when he commenced his anatomy, his practice and his study went hand-in-hand. Fearless and original, ready in expedients and ingenious in their use, he observed, he resolved, and he acted.

In the first year of his study he accompanied his father to a consultation in the case of a man whose leg had been frozen, and whose condition was most critical. It was agreed by the older physicians that amputation at an earlier stage might have saved the patient's life, but that it was now too late to attempt it. Young Crosby urged that the operation be still performed, but the elders shook their heads. He even proposed to attempt it himself; but this was received with a storm of disapproval, in which even his father joined, and the thing was pronounced impossible. The doctors then departed, leaving the student to watch with the patient during the few hours which apparently remained of life. During the night young Crosby succeeded in reviving the courage of the man, to make a last effort for life, and to take the one chance which remained, in the amputation of his leg. At length the patient, after much anxious reflection, turned to Crosby, and said: "Look here, young man, did you ever cut off a leg?" "No, sir," replied the student, "but I should like to." "Will you cut off mine?" asked the man. "Yes, if you will let me," was the prompt reply. "Well, young man, if I live till morning you shall cut off my leg, and I will take the chances." The morning came—the doctors were again assembled. All urged the impossibility of a successful operation, and the father of the young student joined his own protestations to the rest against the hazardous experiment. "Don't try it, Dixi—you can't succeed, and they will kill you if the man dies." But the patient was firm, and the student was ready. The leg was removed, and the man recovered.

His second year of study developed still further the growing resources of the young surgeon. Upon one occasion both father and son, while visiting a patient at night, in a distant village, were suddenly called to a case of extensive laceration of the leg, with profuse hæmorrhage. The case was urgent and the patient was sinking. No instruments were at hand, and the father decided with regret that the man must die, as there was no time to send for his amputating case. "But why let that stop you?" asked the son. "It can't be done," replied the veteran. "Then I will do it myself," said young Crosby. He called at once for a carving-knife, which he sharpened on a grindstone in the adjoining shed, and finished on a razor-strap; filed a hand-saw, which he found in the house; amputated the limb, dressed the stump, left the patient in safety, and drove home with his father to breakfast. The man recovered.

Before a nature so fearless, and so fertile in expedients, obstacles speedily vanish; and young Crosby found himself in possession of a large and responsible practice, even before taking his medical degree, and at the early age of twenty-three years. The following year (1824) he graduated at Dartmouth (having passed his examination in November preceding); and for ten years remained in Gilmanton, in practice with his father. He then removed to Laconia, N. H., where he practised for three years; and in 1838 was called to the chair of surgery in Dartmouth College, then recently made vacant by the resignation of the late Dr. Muzzey. In this field Dr. Crosby found at once full exercise for all his large resources of head and heart and hand. As an instructor he was clear, direct, and definite—imparting to his pupils his own zeal, and teaching them his own self-reliance. "Depend upon yourselves, young gentlemen," he invariably said. "Take no man's diagnosis, but see with your own eyes, feel with your own fingers, judge with your own judgment, and be the disciple of no man."

In his class he was courteous without familiarity, patient with dulness, but quick to punish impertinence; always kind, always dignified, always genial. The practical view of a subject was the view which he delighted to take; and the dry humor with which he never failed to emphasize his point, at once fixed it in the memory of the class, and made it available for future use. Speaking of alveolar abscess, "You must open this abscess, gentlemen, early and thoroughly, and you will search in vain for a suitable and safe and perfect instrument for the purpose unless you can remember to provide yourself with this"—holding up a small *gimlet* with a dainty ebony handle. "This, gentlemen, you can make yourselves. It is a simple *gimlet* it is true, but it is a gimlet with a *surgical handle.*" With his office-students, Dr. Crosby was the very soul of geniality and confidence. He saw and measured men at a glance, and was rarely wrong in his estimate of character. Strong in his own convictions, he was yet tender of the infirmities and the prejudices of others, and his generous instincts lost no opportunity for their daily exercise.

His love of Nature was as instinctive and as thorough as his knowledge of men. He knew where every flower grew on the New Hampshire hills, and he called it by name. He transferred the treasures of the woods to his own garden. He studied the habits of birds and insects, and his parlors were adorned with a cabinet of American birds more complete than is often found in the museum of a professed naturalist. He revelled in the "pomp of groves and garniture of fields," and his daily drives through the picturesque scenery of the Connecticut Valley fed his æsthetic taste, and proved a compensation for fatigue.

Dr. Crosby, though a surgeon by nature and by preference, was in no modern sense a *specialist.* His professional labors covered the whole range of medicine. His professorship included obstetrics as well as surgery, and his practice in this department was exceptionally large. His surgical diocese extended from Lake Champlain to Boston. Distance seemed no bar to his influence, and his professional journeys were often made by night as well as by day. Of the special operations of Dr. Crosby we do not propose here to speak in detail. It is sufficient to mention that, in 1824, he devised a new and ingenious mode of reducing metacarpo-phalangeal dislocation. In 1836 he removed the arm, scapula, and three-quarters of the clavicle, at a single operation for the first time in the history of surgery. He was the first to open abscess of the hip-joint. He performed his operations, without ever having seen them performed, almost without exception. Dr. Crosby was not what may be called a *rapid* operator. "An operation, gentlemen," he often said to his clinical students, "is *soon* enough done, when it is *well* enough done." And, with him, it was never done otherwise than *well*.

At the outbreak of the rebellion Dr. Crosby served in the provost-marshal's office at a great sacrifice for many months, attending to his practice chiefly at night. As years and honors accumulated, Dr. Crosby still continued his work, though his constitutional vigor was impaired by the severity of the New Hampshire winters and by his unremitting labor. At length, having reached man's limit of threescore years and ten, he withdrew from active practice, and in 1870 resigned his chair in the college, to which his son succeeded. From that time it was plain that Dr. Crosby's life-work was done. In his well-ordered and delightful home he found that rest to which his long service in behalf of humanity entitled him. Thus gradually declining—his faculties not dimmed, his sunny temper not clouded—he waited calmly and patiently for the end. Nothing more became his life than his manner of leaving it. His end was perfect dignity and perfect peace.

Dr. Crosby furnishes a beautiful and rare instance of a completed life. He early fixed his aim—he reached it—he did all he attempted, and he did it well. "*Nihil tetigit, quod non ornavit.*"

To those of us who had been most intimately associated with our departed friend, who had enjoyed his teachings, his counsels, and his generous kindness, the news of his death came as a heavy shock. But he still lives in the remembrance of his distinguished services—in the unfading affection and gratitude of his pupils, and in the many hearts whose burdens he has lifted. Verily, "*Extinctus amabitur idem!*"

J. W. B.

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Original Communications.

ART. I.—*On the Question of the Transmission of Syphilitic Contagion in the Rite of Circumcision.*[1] By R. W. TAYLOR, M. D., Surgeon to the New York Dispensary, Department of Venereal and Skin Diseases.

THE question of the possible occurrence of syphilis in the religious rite of circumcision is one, I think, which may be said to be as yet in a wholly unsettled state, and one which for obvious reasons possesses points of the greatest interest. Though this source of syphilitic contagion is mentioned by some authors in such a manner as to convey the impression that it is an admitted fact, I think that a careful reconsideration of all the facts which we possess in support of such a view will lead to the conclusion that it is not by any means fully proved. For, when all the details relating to the various suspected cases are critically examined, it will be seen that we have not the history of a single case, the symptoms and lesions of which clearly and positively point to syphilis as their origin, nor the case of a single syphilitic child in which syphilitic contagion has been positively traced to the person who circumcised it, he being proved to be syphilitic and to have syphilitic lesions in his mouth. In fact, a suspicion strongly suggests itself that the cases alluded to have been somewhat obscure in their nature, and were attributed to syphilis, for the reason of the existence of lesions on the genital organs, and certain vague symptoms which it was, by some, thought could have no other origin than syphilis. This being the state of the question, any cases, facts, or observations, which tend to throw an additional light upon it, possess great value, and claim our earnest attention and study.

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[1] This paper is based mainly upon and includes a report, prepared at the request of the Board of Health, upon a series of suspected cases. It was submitted to that body June 10, 1873.

Early in the present year the attention of the Board of Health of New York was called to the existence of four cases in which it was suspected that syphilis had been communicated in circumcision. That body did me the honor of placing the question in my hands for solution, and the result is the paper which follows. It will be seen that, for obvious reasons, I have been unable in such a document to review the whole subject; so, in order to present a full statement of the question, I have appended notes, which, if read in connection with the text, will subserve the purpose quite fully. In the investigation of these cases, the aim of the Health Board has been, not only to establish their nature as clearly as possible, but also to develop such facts and suggestions as would have a bearing upon the question of prophylaxis. This being the scope of the work, the question of how to prevent the occurrence of syphilis in this rite has necessarily occupied considerable space in the report, and this has, of course, assisted in giving a completeness to the present paper. This point has also brought prominently forward certain facts, relating to the performance of the rite, which are of great interest as bearing on the question of contagion.

To Dr. E. H. Janes, *Sanitary Superintendent, N. Y. City.*

Having, in accordance with your wishes and in association with Assistant City Sanitary Inspector A. B. Judson, examined the two cases of suspected syphilitic contagion in the operation of circumcision, as well as having carefully considered the details of two other similar cases, I hereby submit to you the following report:

As you know, there were four Jewish children, previously healthy, who, after circumcision by a Hebrew named H——, were attacked by phagedenic ulceration of the penis, and by lesions of the skin and lymphatic ganglia, accompanied, in three of the cases, with exhaustion which resulted in death. The questions which arise, and they are of great importance in their social, sanitary, and medico-legal bearings, are: What is the nature of the disease with which these children were afflicted? In what manner was the disease communicated; or how did it originate? What means can we take to prevent similar cases of disease in future?

In order to answer these questions properly, I shall have to consider at some length the clinical histories of the four cases, to examine into the nature of the operation which they underwent, and then into the present condition of the person who performed the operation.

I may here add that the investigation of these cases has been attended with several drawbacks and under somewhat unfavorable circumstances. Having been entered upon nearly a year after the commencement of the trouble, after two children had already died, among a low and ignorant class of people, and I being unable in several instances to obtain desired information on important points, it is utterly impossible to present all the particulars of the cases. The histories of the cases are as follows:

Case I.—Simon Gutmann was born May 1, 1872, and was circumcised by H—— on the eighth day. Parents were not syphilitic. They state that the wound of circumcision healed in a short time, and that, two months after, the cicatrix became ulcerated, but that the inguinal ganglia were enlarged before that time. Information as to the line of treatment followed was not precise, but I am satisfied that a mercurial course had not been adopted. In company with Dr. Judson, I saw the case February 19, 1873. We found the child to be very fat and well developed, and it was evident that its nutrition was not seriously disturbed. Over the trunk, arms, and thighs, I observed a well-marked papular syphilide of the small variety. The whole eruption had evidently existed for two months, and it had then passed to the stage of decline, as there were evidences of its involution in its desquamation and fading of color, and in the subsidence of the papules.

On the penis also I found unmistakable lesions. The line of incision in the prepuce, in three-fourths of its extent, was the seat of a hard, indolent swelling. The swelling or induration was divided into two on the dorsum of the penis, being constituted of two lateral halves. The length of each of these indurated nodules was about three-quarters of an inch, and the breadth fully half an inch. To the touch the induration was perfectly characteristic, and presented that cartilaginous hardness peculiar to the Hunterian lesion. When pressed it did not yield, but preserved its contour, and slipped from between the fingers. Upon close examination I found that the indurating neoplasm was developed mostly in the subcutaneous connective tissue, and that the upper portions of the derma were not then involved. This feature is frequently observed in the course of the initial lesion in the adult subject. At the upper portion of the glans there was a small ulcerated spot on the line of union, but it showed no great tendency to extend. The history of the case, as obtained from the parents, was that the wound of circumcision had healed, and that fully two months after, probably more (on this point they were very positive), a sore appeared on the site of the incision, and had remained in an ulcerated condition for several months. In each groin I found a sinus communicating with inflamed ganglia, over which was situated a somewhat inflamed integument. The orifices and general appearances of these sinuses were similar in appearance to those of any simple inflammatory adenitis, and similar also to the suppurative adenitis following enlarged ganglia of syphilis which have suppurated. The post-cervical chain of ganglia was enlarged, and in consequence of the thickness of the fatty tissue I could not ascertain the condition of the epitrochlear ganglia.

At a subsequent visit in May, 1873, I observed that the crop of papules which I had seen in February had nearly disappeared, leaving small, slightly pigmented desquamating spots, and had been replaced by a more pronounced rash on nearly the same sites. The general health of the patient at this time seemed good.

CASE II.—Harris Lewin was born June 1, 1872, and was circumcised at the eighth day by H——. Parents were perfectly healthy. Its mother says that the incision healed excepting a portion, which became sore two weeks after the operation. According to the mother's statement, this ulceration continued eight months, and we find in the case-book of the German Dispensary that she applied to Dr. Schmidt, in October, and that he recorded it as a case of ulceration of the glans penis and bubo of the right side, which was opened by him. The child lived until the 3d of March, and was then said to have died of pneumonia. It is said that its neck swelled before death.

In company with Dr. Judson I saw this child on the 19th of February, 1873, and then again about two weeks after, at the New York Dispensary. The appearances presented were as follows: Upon the glans penis and upon the sheath of the penis, as far as the pubis, was an ulceration superficial in character and covered for the most part with brownish-yellow crusts. I carefully examined for induration, and I satisfied myself that a hardness existed just around the glans, being quite distinct near the frenum. However, it was not of the positive character of the other case, but was due, I thought, to the cicatricial tissue, which was there more copious than elsewhere. The ulceration was not of the phagedenic character which sometimes complicates the initial lesion, but it struck me at the time as being more of the nature of chronic eczema which had followed a previous inflammation of the parts. The appearances were certainly not those usually observed in severe ulcerations of hard chancres. My opinion of the eczematous character of the ulcers is based on the appearance of the crusts, on the superficial character of the ulcerations, and the condition of the active œdema surrounding them. The well-known fact that a simple eczema may develop and run an uncomplicated course upon a syphilitic subject is in support of this view. According to the statements of the parents, the ulcerations on the penis had at one time nearly healed, and they, after that, assumed the present appearance. This fact also would favor my view of eczema, which besides has as support the well-known pathological fact that a long-continued, severe inflammation, simple or specific, may engraft upon the integument a tendency to eczema or subsequent hyperæmias. In the present instance a long-continued and perhaps specific inflammation had existed fully nine months, and was followed by what, in my opinion, was a simple eczema. The condition of the groins was that of inflammation of all the ganglia and peri-ganglionic connective tissue, with sinuses leading thereto. These sinuses presented nothing peculiar in their appearance, and resembled those observed after simple adenitis. The body of the child was free from present syphilitic lesions. Its general health was very bad; it was thin, pale, delicate, weak, and very peevish. Owing to the extreme ignorance of the parents, we were not able to obtain any other information of the case, than that the child had been cared for by no one but its mother; it had not been allowed to stay even for a few minutes with any nurse-girl, nor was there any other male of the family than its father in the house. The importance of this information I will bring out further on, and I may say that I obtained similar facts from the parents of the Gutmann child, except that it had been cared for during ten days by a very old midwife.

The two following cases were not seen either by me or Dr. Judson, and the details are of course fragmentary and not satisfactory:

Case III.—Wolf Harris was born June 16, 1872, and was circumcised by H——. Parents lived at No. 65 Mott Street. The wound of circumcision did not heal; ulceration attacked glans, and in a short time the whole penis was involved in the process; and later on it sloughed off. Ganglia were said to have been unaffected. The child died February 1, 1873, and its physician, Dr. Loewenthal, reported that diphtheritic ulceration and exhaustion were the causes of death. In the record there is no mention of cutaneous or mucous lesions. The parents were ascertained to be free from syphilis. The child was past seven months old when it died.

Case IV.—William Simon was born August 24, 1872, and was circumcised by H——. The father, mother, and brother of the boy, were ascertained by Dr. Weiner to be free from syphilis. After the operation an ulcer appeared on the glans penis, which increased so much that cauterization was necessary. Inguinal ganglia became tumefied, and ultimately an opening was made, and pus was discharged. The child was said to have had a syphilitic eruption, but no positive details were given. It was treated by antisyphilitics, but died at Dover, N. J., March 3, 1873. It had abscesses in the back and groins.

In carefully analyzing these cases, it will be seen that, in each one, lesions on the genital organs followed the rite of circumcision, and that in the first case lesions pointing to a grave constitutional disease were observed; but that in the others, though we have evidences of a severe adynamic state of the system, the lesions and symptoms are not described with the accuracy necessary for absolutely definite conclusions as to the exact disease. In studying these cases, therefore, I am only able to draw positive conclusions as to the nature of the disease of the first, and shall have to speak with some hesitation upon that of the other three. Considering the facts that these children were within a period of six months circumcised by one man, and that each was attacked similarly at first, it would seem rational to suppose that they all suffered from the same disease; yet, plausible as this supposition may appear, we are not warranted in arriving at it, until we have been convinced by a careful inquiry into the nature of the cases, their course, their lesions and symptoms, and various collateral facts. As to the nature of the disease of the Gutmann child, I am warranted in saying in advance that it was syphilis, and that the existence of lesions on the penis is the only cause for the suspicion of syphilis in the other three.

In studying the various lesions, I shall begin with those of the genital organs. Recorded cases of primary syphilitic lesions of the genital organs of the infant are as yet so few in number, that we have no systematic description of them, therefore there are some features in these cases which are of clinical value, besides the main interest which is attached to the case itself. As to the character of the induration observed in the Gutmann child, no one at all familiar with syphilis could have mistaken it. It was a hard, cartilaginous mass, readily distinguishable to the touch from the surrounding tissues, and following accurately the line of union of the prepuce, and not attended, as a complication, with any inflammatory œdema. In the course of no disease other than syphilis would such a lesion be found. From the statement of the parents I learned that it had for a long time been attended with severe ulceration, and the suppurative adenitis of the inguinal ganglia convinced me of the truth of the statement. The length of time of the existence of this induration is peculiar, and is interesting clinically. According to the statement of the parents, whose ideas on other points were not always clear and satisfactory, the ulceration of the penis did not begin for nearly two months; in this assertion they were very positive, particularly the mother, so that I am disposed to accept it as true. I was unable to ascertain definitely the precise time of the commencement of the indurating process, as it was a feature observed by no one at that time. Reasoning by analogy from the course of the development of the initial lesion in children, in other sites of the body, I should say that the syphilitic process, either by erosion, ulceration, or induration, developed itself within a fortnight after contagion. The fact that we have here an open wound, thereby presenting a free and extensive port of entry for the syphilitic virus, would favor the view of a short first period of incubation of syphilis in this child. So the fact that the wound of circumcision healed, and that the initial lesion appeared about six weeks after the performance of the rite, presents, I think, reason for doubt as to whether the contagion took place at that time.

In the early part of its course this initial lesion was attended with adventitious inflammation which involved the ganglia in suppuration. Then gradually the inflammation ceased, leaving the nodules which I have described. The existence of these nodules for a year, or rather their existence in the twelfth month of the initial lesion, presents, as I have said, interesting features. Generally in the child these indurations are not extensive nor of long existence; indeed, in many cases, the induration of an initial lesion is so slight as to be readily overlooked, and, when found, scarcely appreciable. In the present case I should attribute its long duration to the extent and compactness of the neoplasm, as well as to the fact that a mercurial treatment had not been instituted. Had this Gutmann child been placed upon a mercurial course, it is very probable that the indurated nodules would have disappeared much sooner.

The next feature of the initial lesion for our consideration is the ulceration, and this brings up the point as to whether the lesions on the genitals of the other children were really syphilitic in their nature. In two cases, according to the history, the ulceration was slow in its progress, so that several months elapsed before the penis was destroyed; in a third it was likewise slow in its course, but finally healed, and was replaced by an eczematous eruption; in the first or Gutmann case the ulceration was at one time severe, but finally ceased, leaving the indurations already described. The course of the ulcerations in the first two cases certainly is not similar to that of the ulceration of the initial lesion of syphilis, which is sometimes very rapid, being then phagedenic in character, then again less rapid, but in that event not occupying such a length of time as was observed in these cases. So that, if these lesions were really syphilitic, the course of their ulceration did not correspond with that usually observed in the hard chancre; nor is the course of the ulceration like that of the soft chancre, which is either rapid, and then it destroys every tissue of the penis, or chronic, in which case, according to my observation, it involves a single tissue. Thus it runs a serpiginous course over the integument, occupying sometimes a long period; or, again, it gradually destroys the glans or the corpus spongiosum: in these cases the integument generally escapes. Apart from the weight which these clinical facts exert against the supposition that they were chancroidal sores with which these children were afflicted, we have the evidence offered by the appearances of the suppurating ganglia, which were not at all chancroidal in aspect, and then again the fact that contagion with the soft ulcer in the mouth would be almost impossible under these circumstances.[1] It was suggested that perhaps a diphtheritic ulceration had attacked the wounds of these children, but there is no proof in support of such a view, as the features of the ulceration were not of the character observed in the diphtheroid complication of wounds, nor have we any evidence of the existence of diphtheria; and, had such a complication as diphtheria existed, it would in all probability have proved rapidly fatal. A fact of some significance is to be noted in this connection, and that is that in one case, that of Harris Lewin, the ulceration, which at one time threatened to be serious, was checked, and that a simple eczematous condition was left, whereas in the two others it was very destructive.

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[1] Diday reports ("Annales de Dermatologie et de Syphiligraphie," ii., 1873) an apparently authenticated case of intra-buccal, soft chancres. The patient was a girl having genital chancroids, who also had similar ulcers, one on the inner aspect of the lower lip, the other on the anterior aspect of the fauces.

What, then, was the nature of this ulceration? As I shall show further on, and a perusal of the last three cases will reveal, the evidences of constitutional syphilis were very vague. It is stated that one child had an eruption which was regarded as syphilis, but stress is not laid on the point; and, with the exception of abscesses which occur in syphilitic and non-syphilitic children, we have no other symptom, so I think that under the circumstances we do not make our case in establishing syphilis. The question suggests itself: Was this ulceration the result of neglect of the wound of the operation, as we know that the low class of Polish Jews to which these children belonged is as a rule careless, uncleanly, and even filthy? I am inclined to answer this question in the negative, for the reason that I am informed by a person, who has performed many operations of circumcision among this class, that even amid their want of care and filth the wound generally heals very rapidly; and then also for the reason that there is in children generally a tendency to rapid reparation of wounds, even when not well cared for. Can it be that it is a slow destructive process dependent upon uncleanliness and upon some peculiar condition of the tissues, the latter induced by the former? We certainly observe in some children tendencies to local destruction of tissue, as in the sloughing of greater or lesser portions of the integument following sometimes upon a small pustule or scratch, and also in the disease we term "noma." Can it be that this was the condition which occurred in these children? Certainly, if it was not a syphilitic process, we must look to a peculiar condition of the tissues of the children for an explanation.[1]

The occurrence of the eczema on the penis of the second case, after the existence of the previous inflammation, is an instance of the well-known fact that any long-continued inflammation of the skin may engraft on that tissue thereafter an eczematous tendency. As an evidence for or against syphilis, I am of the belief that it points to the non-syphilitic nature of the ulceration which preceded it, rather than to a specific ulceration.

In this connection I may state my views as to the existence of syphilis in the second child, named Harris Lewin, upon whom I observed the eczematous ulcers of the penis with inguinal adenitis. Having given the case due thought and observation, and having had my suspicions previously aroused as to the existence of syphilis, I must say that I am not convinced that the child was syphilitic, and I think that the details which I have given, conscientiously and as full as my opportunities for observation would allow, will convince any observer that there is in the premises reason for reservation and doubt. I reach this conclusion after a careful study of the case and its surroundings, and I respectfully venture to express it, as an eminent and learned authority has expressed the opinion that the case was one of syphilis. The same remarks apply to the other two cases, those of Wolf Harris and William Simon.

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[1] It seems to me that this view of the local origin of this destructive process is the one which is the most rational, and is borne out by analogy. Thus in the phagedenic condition of hard and soft chancres, the fact that local measures are the only efficient means of treatment, and that the process is wholly uninfluenced by internal remedies, gives weight to the view that the rapidly-destructive process is in consequence of some tissue-change induced by the previous milder ulceration. Then, again, in the sloughing of the genitals of the female infant, we in the majority of instances cannot find a systemic condition to account for it, but inquiry sometimes reveals the fact that uncleanliness induces hyperæmia and ulceration of the parts which goes on in some instances to destruction of large portions of tissues, under which circumstances also internal medication is powerless. Again, in chronic serpiginous chancroid, the destructive process sometimes continues long after the pus has ceased to be auto-inoculable, a fact which can only be explained by some local condition of the integument. Finally, in some rare cases of simple serpiginous ulcer of the integument following scratches or other lesions of continuity, we find that our only means of cure is in topical medication. Possibly these suggestions may help to explain the ulceration in these cases.

The condition of the ganglia of the two cases which I observed was simply that of a suppurative inflammation, having nothing specific in appearance; in fact, as evidence of syphilis, it is of no moment, as the same appearance is sometimes observed in cases where ganglia, enlarged by syphilis, have, owing to irritation of the initial lesion, undergone inflammation and formed abscesses, as well as in cases where ganglia have undergone simple suppurative inflammation. In the Gutmann case, which is undoubtedly syphilitic, the appearances were similar to those of the Lewin case, which is doubtful.

We now come to the evidences of syphilis in the system, and here the Gutmann case furnishes clear proof. As I have said, in the clinical history of the case, there was, at my first visit to the child, a papular syphilide of the kind most frequently observed in children, and at that time it was in a condition of involution. At a subsequent visit, I saw the traces left by this eruption as well as a relapse of the same lesion, in a more marked form. The peculiar features of the papules, their evolution, course, and decline, were such that any one familiar with the lesions of syphilis in the child would have readily and positively recognized them. There were no other progressive lesions apparent, and careful inquiry elicited the statement that lesions of the mucous membrane had not existed.

Lastly, as regards the evidences of syphilis, we have to consider the adynamic condition which was observed in these fatal cases. Recognizing, as we do to-day, that syphilis is a disease which, in greater or less degree, impairs the functions of organs and perverts the nutrition of the body, we might assume, in consequence of the suspicions attached to these cases, that syphilis was the remote cause of the death of these children. Plausible as such an hypothesis might seem, I think that the circumstances and facts taken as a whole will not warrant it, and that we must come to the conclusion that, although such may be the case, probably the long-existing lesion of the penis of these children, with the suffering which accompanied it, so reacted upon their general condition and impaired their functions that they either died of the resulting cachexia, or were rendered easy prey to intercurrent acute diseases. The general health of the Gutmann child appeared to me to be very good, as I observed evidences, in its development and strength, of a healthy nutrition, and to this state we may probably ascribe the fact of its not having succumbed to the malign influence of syphilis.

My conclusions, then, as to the existence of syphilis in these cases, are as follows:

1. That in the Gutmann child we have the typical lesions of syphilis.

2. That the circumstances of the development of the initial lesion in this case leave room for doubt as to whether the contagion took place in the religious rite, but that there is a possibility that it did.

3. That, in the other three cases, the facts elicited, as well as analogical evidence, point to a local rather than to a systemic condition as the origin of the lesions of the genitals.

4. That the evidences in the cases are against rather than in favor of the view that they were the result of syphilis.

The probability that the operation was the starting-point of the contagion being conceded, it becomes our duty, if possible, to prove that such was the case.

You undoubtedly know that the opinion has been suggested that these Jewish children became syphilitic in consequence of the wound in circumcision having been sucked, according to a custom prevailing among the low classes of stopping hæmorrhage, by the operator, who had syphilitic lesions in his mouth. I may here call your attention to the fact that among the lower classes of Jews this old method of controlling the hæmorrhage which takes place in the operation is now, though nearly obsolete, sometimes practised, and is done by the insertion of the child's penis in the mouth of the operator, which contains either port wine, salt-and-water, or vinegar-and-water. It can be readily seen that if primary or secondary lesions of syphilis exist in the mouth or throat of the operator, the circumstances would be very favorable to the transmission of syphilis to the child. So that, in this case of the Gutmann child, to make our position positive, it is necessary to establish three facts: 1. That the operator was syphilitic; 2. That at the time of operation he had secondary lesions,[1] or their sequelæ, such as excoriations and fissures, in his mouth or throat; 3. That he had sucked the wound.

These are the points to be established concerning the operator; then the inquiry suggests itself, Could it be possible that syphilis was or could be communicated in the operation, the operator himself being perfectly free from syphilis? I think that an affirmative answer may be made to this inquiry, for the reason that the cutting instrument used might, perchance, have been soiled with syphilitic blood either from a patient operated on a short time before, say a day or two, or from that of a child who, perhaps, had been operated upon during the same ceremony as the first child, the instrument being used on the second without having been cleansed. To settle these points, we have to examine, as rigidly as possible, the physical condition of the operator, and to inquire carefully into the minute details and circumstances attendant upon the operation; and in this connection we must consider the fact that these contagions (for the time we will assume that the last three cases were syphilitic) took place during a period of four months;

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[1] In the famous discussion upon Vaccinal Syphilis at the French Academy, M. Trousseau alluded to the fact that a Parisian peritomist, or circumciser, having been accused of having communicated syphilis to a number of Jewish children, was examined carefully by M. Ricord, who failed to find any lesion of syphilis in his mouth, or to establish the fact that he was syphilitic. In quoting this fact, in a very able and exhaustive article on Vaccino-Syphilitic Inoculations (*American Journal of Syphilography and Dermatology*, July, 1870, *et seq.*), my friend Dr. F. P. Foster makes, in explanation, the suggestion that "almost any mouth may be made to furnish blood by the simple act of suction." I am inclined to think that the suction in these cases is never sufficiently violent to cause blood to exude, and that we must exclude it as the vehicle of contagion. Should excoriations or fissures exist in the mucous membrane, or should such a pathological condition as softness and tumefaction of the gums from any cause—as, for instance, salivation—exist, or the operator be of the hæmorrhagic diathesis, I can readily see that the chances of contagion would be rendered probable.

therefore the following inquiry arises: Could the primary or secondary lesion or lesions, or their sequelæ, of syphilis exist for such a period, and did this person in that time, besides circumcising these four children, circumcise any others, and if he did, what is their condition as far as known at present? As regards the existence of the primary lesion of syphilis, we positively know that it might have existed four months and even longer; and as regards the secondary lesions of syphilis, which we should find in or about the mouth, namely, mucous patches and the excoriations and fissures resulting from them, we know that they persist sometimes for very long periods. Therefore the usual well-known course of these lesions would render it probable that contagion might take place during a period of four months. I examined the operator, Mr. H——, with great care, and I found upon him no evidences of syphilis past or present. In the throat and mouth I found the tissues in a normal condition. The lymphatic ganglia, as far as accessible, were normal except those of the left inguinal region, which were slightly enlarged. Upon the upper part of the trunk was a quite copious eruption of tinea versicolor, and upon the back were a few acne-papules. With these exceptions, the integument, which is undergoing the atrophy peculiar to old age, presented no lesions. There was a hernia of the right side, and a corresponding large hydrocele. There were no evidences of nodes upon any of the bones, no signs of preëxisting lesions of the eyes, or nails, and upon the penis no cicatrices were to be seen. The answers to my inquiries, which were made by the kindly old man with the utmost readiness and candor, were that he never had had any lesion on the penis nor discharge therefrom, he never had had a chancre anywhere about the body, nor had he been troubled with any sores of the mouth or throat. Upon this point he was emphatic. I inquired minutely as to the existence of every conceivable lesion of syphilis, and I was answered in the negative. The old man is now past sixty years of age, and has had no sickness except chronic rheumatism of the larger joints, from which he has suffered for years, and which, by-the-way, does not present any syphilitic characteristics. As regards the operation, he showed me the two instruments used in its performance: the first is a flat knife with two cutting edges; the second, a shield of pure silver, which is merely a plate of flat metal somewhat round in shape, and perforated through two-thirds of its extent by a fissure about a line in width. The prepuce is slid into this fissure, and, when the measurements have been adjusted, the distal portion is excised by the knife, cutting from side to side, rather than from above downward, or *vice versa.* The instruments were perfectly clean at the time of my inspection, and he assured me that he always took great care to keep them so. In answer to my inquiry as to whether he ever circumcised two children at the same ceremony, he said that he never did except in cases of twins, and he had probably performed the rite three thousand times. As to the sucking of the wound, he said that he had sometimes done it, but of late years very rarely if at all, and that he preferred to squirt the styptic lotion upon the wound, a procedure which, I believe, is largely if not exclusively followed by the higher classes of Jews. He looked over his record and found that, during the four months in question, he had performed the rite eight times, inclusive of the cases under consideration; and he assured me that he had seen two of the cases very recently, and that they had had no trouble, and that, one month previous to the circumcision of the first case, he had circumcised his grandson, whom I saw to be healthy.

The evidences are then in favor of the freedom of this person from syphilis; yet, strong as they are, we are yet warranted in the suspicion that, even after this careful examination, syphilitic lesions might have existed; still, in a scientific investigation, vague theories and suspicions go for naught: therefore we have failed to prove one point as to the transmission of syphilis from the operator to the infant, and I think that we likewise fail to explain the existence of syphilis by reason of syphilitic virus transmitted on the instrument. So that, whatever our suspicions may be, the facts, as far as we can get at them, thoroughly exonerate Mr. H——.

This explanation failing, the next point to be considered is, Could syphilis have been by some means engrafted on the wound either by the libidinous conduct of some syphilitic female, by the application of dressings,[1] or caustics soiled with a syphilitic secretion?

After careful inquiry, directed so as to bring out every possible source of such accidents, I could not elicit any affirmative information. In this connection I must mention the fact that has already been stated, that the induration in the Gutmann child was developed directly in the line of incision, and was confined to that portion. This fact certainly points very strongly to the operation as its source, as it is probable that, if syphilis had been, by a subsequent action, engrafted on the wound, its initial lesion would probably have been more local in character, and would not have followed the incision-line so closely, except perhaps in the almost impossible circumstance that it had been sucked after the operation and before healing by a person having in his or her mouth syphilitic lesions. One final point is to be considered in this connection. We have in the Gutmann case a period of incubation of the initial lesion of about sixty days' duration. Does this fact or does it not point to the operation as the origin of the syphilis in the child? Does the lapse of such a length of time preclude the hypothesis that contagion dates from the operation? On this point we unfortunately have not very numerous clinical data as observed in the child. In the adult such a length of time, though exceptional, is admitted as having elapsed, and I have seen two authentic cases with such an incubation. In the infant we have not any recorded case, but we have the clinical fact, which is important, that, when developed in the vicinity of the mouth, the period of incubation of these lesions is comparatively short, namely, a week or ten days. The conclusions, then, to be deduced from these facts are somewhat conflicting, as the shape and general features of the lesion of the penis are such as to render it probable that it originated in the operation, while the long incubation of the lesion establishes a probability that its origin was more recent. Therefore, after all our patient inquiry, we must finally leave the origin of all these cases in doubt: the first, as to whether the syphilis was communicated in the religious rite;[1] the other three as to whether or not they were cases of syphilis at all. Yet I am disposed to think that our labor can be turned to profit in two ways: first, as suggesting some facts which will materially assist in following up similar cases in future; second, in bringing forward prominently the fact that in this widespread religious rite there is a probability of the occurrence of syphilitic contagion. This naturally brings us to the question of prophylaxis: What can be done to prevent the occurrence of syphilitic contagion in this rite?

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[1] The opinion has recently been advanced by my friend Prof. W. Boeck, of Christiania ("Die Eigenschaften des Syphilitischen Virus," *Archiv für Dermatologie und Syphilis*, iv., 1872), that such articles as towels, etc., cannot be the means of communicating syphilis, as he thinks he has conclusively demonstrated the point by experiment. I am inclined to differ in opinion, for the reasons—1. That Dr. Boeck, in his experiments, used a purulent auto-inoculable secretion, produced by irritation of a hard chancre, and not the secretion of the chancre itself; 2. Because I have seen at least one authentic case in which contagion took place in this manner.

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[1] There is so much loose statement regarding Ricord's cases of suspected syphilis in circumcision, that I think that they must be cast aside as unworthy of record. Ricord himself did not find any syphilitic lesions in the mouth of the circumciser, nor does he satisfy himself that he was syphilitic at all; and, although he at one time regarded the cases as syphilitic, he afterward doubted his own conclusion, and thought that perhaps the disease was glanders with which the children were afflicted. This proves, I think, very distinctly that a clear case of syphilis was not made out in any of the children, and, considering the acumen of the observer, the number of cases he had for observation, and the fact that they were seen in full time, I think that, had they been cases of syphilis, the diagnosis would have been clearly made, and we should have an unequivocal statement from Ricord, instead of receiving it at second hand. Trousseau, in the famous discussion on Vaccinal Syphilis ("De la Syphilis Vaccinale," p. 81, Paris, 1865), quoted the cases as showing that syphilis could be communicated by such a physiological secretion as the saliva, but we now know assuredly that such an hypothesis is utterly untenable. There being so much doubt even in Ricord's mind as to the syphilitic nature and origin of these cases, it seems very strange that some authors accept these cases as precedents, and on their evidences admit unreservedly such a mode of contagion. Certainly such a contagion is probable, but it is not established by such vague and unsatisfactory conclusions as were necessarily arrived at in these cases. I have been informed by friends that several undoubted cases of this form of contagion have occurred in the service of Dr. Sigmund, in the General Hospital of Vienna; but, as their histories have not been published, we are not as yet in possession of a single reliable recorded case. In reading, recently, Dr. Kaposi's very elegant atlas of syphilis ("Die Syphilis der Haut und der Angrenzenden Schleimhäute," Vienna, 1873), I find that he gives the illustrations of two cases of Jewish children having ulcers on the penis. The first case is that of a child, four months old, who has chancroids of the

You are undoubtedly aware of the fact that the operation is performed by three classes of persons, by the rabbi, by physicians, and by non-professionals. Among the higher classes of Jews it is either done by a rabbi or by a physician, neither of whom, as a rule, sucks the wound, but rather squirts the styptic solution upon it. Consequently, here the chances of contagion are at a minimum. Among the lower orders, however, the operation is largely performed by non-professionals, among whom the habit of sucking[1] the wound is usually followed, who may be of course irresponsible and ignorant persons, certainly those who are liable to syphilis, and who, ignorant of the contagious character of its lesions, are liable to communicate it. The most effectual means of preventing such contagion, then, consists in the abolition of the custom of sucking the wound.[2] In fact, under the circumstances it

glans and furrow, and the mucous layer of the prepuce. The second case is, likewise, that of a boy, four months old, which was observed at the same time as the first. Upon the penis, in this case, are two ulcers, one, in the reparative stage, at the meatus, the other near the frenum, and said to be seated on a hard base. These ulcers are described as soft chancres, and said to have been communicated in the rite of circumcision. It seems singular that chancroidal contagion should take place in this rite, and also that chancroids should have existed for four months, and should not have attained a larger size than they appear to have, as judged by the illustration. The full details of the cases will undoubtedly appear in a subsequent fasciculus of the work.

[1] In his "Lettres sur la Syphilis," troisième édition, p. 192, Paris, 1863, Ricord, in speaking of syphilitic contagion by suction of the wound in circumcision, says that he had urged the Jewish Consistory of Paris to abolish the practice, as tending to propagate syphilis, and that that body had followed his advice.

[2] It will be seen that in either event, whether the wound is sucked or whether it is squirted upon from the mouth, the operator uses a styptic solution, viz., salt-and-water, vinegar-and-water, or diluted port wine. A practical idea here suggests itself. Suppose the operator had mucous patches in his mouth, or even an initial lesion of syphilis, and that he either squirted the solution, or retained it in his mouth and inserted the penis, what effect would the styptic solution have upon the contagious secretion; or, again, what would be the effect of such copious dilution?

would be expedient that the styptic fluid should not be put in the mouth at all. A further safeguard would consist in the delegation of responsible persons, physicians for instance, for the performance of the operation, and in the removal of the privilege to perform the rite from the hands of the non-professionals who now so largely perform it.[1] In suggesting the selection of physicians as operators, I am of the opinion that, as they are familiar with the contagious lesions of syphilis, of syphilitic contagion, and of the circumstances attending such contagion, the chances would be very small. Then, again, as it is an operation sometimes attended with troublesome accidents, such as severe hæmorrhage,[2] etc., it is necessary to have

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We know that the secretion of the hard chancre and also that of mucous patches is an albuminous fluid, liable like all such fluids to undergo coagulation: would this coagulation prevent the contagion? My impression is that it might. Then, again, what would be the result of the great dilution? I also think that in this instance it might prevent contagion. So that in either case the chances of contagion would be rendered in all probability less. I think, however, that if an incised wound similar to that of circumcision were brought into direct contact with mucous patches or a hard chancre, there would be a very great risk of contagion, even though the styptic were held in the mouth.

[1] In the discussion upon this paper, when read before the Public Health Association of New York, June 12, 1873, the fact was brought out that there are many recognized non-professional circumcisers, who perform the operation even more skillfully than the majority of physicians, and who are equal to any emergency which may arise in the course of the operation, or of the healing of the wound. Indeed, among those who spoke with authority, there was a decided preference in favor of these persons. However, it seems to me that there should be some tribunal or source of power, so that the performance of the rite should be only delegated to persons of recognized intelligence and skill, and that it will not, as it has among the lowest classes, sometimes fall into the hands of ignorant or unskillful persons.

As regards the instrument, I find that, among both high and low, it is looked upon as somewhat sacred, is reserved exclusively for the operation, and kept scrupulously clean, so that in reality there is very little chance of any contagion from it.

[2] In the same discussion, Dr. C. P. Russel, the Registrar of Vital Statistics of New York, made the following remarks *à propos* of this subject. ". . . I desire simply to coöperate in the endeavor to suppress a species of malpractice common among the poorer Jews, to which my attention was first drawn in the latter part of 1870, by a succession of deaths

some one in attendance who can act intelligently and efficiently. In the performance of the operation it is well to bear in mind the fact that syphilitic blood is one of the vehicles of syphilitic contagion; therefore, care should be taken to always use perfectly clean instruments, and never to perform the rite upon two children in succession, without thoroughly cleansing the instruments after the operation on the first, and before that on the second, because the first child might perhaps be the victim of hereditary syphilis, in which case its blood would possess contagious properties.

My conclusions, then, upon the subject are as follows:

1. That in the Jewish rite of circumcision there is a possibility of the occurrence of syphilis.

2. That the contagion is most likely to be communicated in the act of sucking the wound, the mouth containing a styptic liquid, and that perhaps it may occur by means of instruments soiled by syphilitic blood.

3. That the chances of such contagion are rendered greater by the performance of the operation by irresponsible, non-professional persons.

4. That the operation of sucking should be wholly abolished, and that, if a styptic solution of any kind is used, it should be poured from a vessel on the wound rather than squirted upon it from the mouth of the operator.

5. That in no instance should two or more children be thus operated on consecutively without a thorough cleansing of the

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returned as due to hæmorrhage after circumcision. My inquiries then convinced me that circumcision is rarely fatal with proper surgical care, and that such result, when it occurs, if not dependent upon an hæmorrhagic diathesis, is generally to be ascribed to unskillful performance of the operation and subsequent inattention to the case. It appears that there exists a class of ignorant and clumsy operators who make a special business of circumcision, performing it for a small fee, and leaving the infant afterward to the sole care of its parents. I understand, however, that there are also a number of very competent non-professional gentlemen who are in the habit of performing the operation in a manner quite unobjectionable. It seems inexpedient to take any official notice of the subject; but it is suggested that those professional gentlemen and laymen who possess influence among our Hebrew population should interest themselves in checking the evil by some organized effort."

instruments and utensils used after each operation, and that in every instance the greatest care should be taken in cleansing the instruments.

6. That the performance of the rite should be absolutely confined to responsible and educated persons; either a physician alone being selected, or a physician assisting an officiating rabbi, or a circumciser of recognized merit.

7. That, under these circumstances, accidents of any kind are reduced to a minimum.

Attention to these points will, under any circumstances, be of great benefit, and will render a rite, which has useful sanitary bearings, less liable to fall into disrepute among those upon whom it is obligatory.

ART. II.—*Accommodation for the Insane on the Cottage Plan.* By WINTHROP B. HALLOCK, M. D., Assistant Physician to the Connecticut General Hospital for the Insane, at Middletown.

THIS subject of provision for the insane is not a new one. Among those who are immediately connected with the care of the insane, the question as to how *all* of them (the independent class) shall be decently provided for, has been extensively discussed, and there seems to be no sign of its abatement.

Outside of the medical profession the fact which gives rise to the discussion is not very generally known. The public have no knowledge of the great number of dependent chronic insane existing in almost every State that are unprovided with asylum accommodation. A part of them only get such accommodation; the rest are mainly kept in almshouses, and it is desirable that all should be cared for alike. Hence the discussion of the question as to the best mode of bringing about this much-desired end.

The problem of merely the mechanical part of making provision for the insane is generally looked upon as one extremely complicated and difficult to deal with. Every asylum building for the insane, in this country, is evidence of this fact. To provide accommodation upon the present hospital plan for a few hundred of these persons, is, owing to the immense cost, a very formidable undertaking, and it requires a prodigious effort on the part of the movers in a matter of this kind to create and complete one of these modern institutions.

Differing somewhat from the present hospital system for all the different forms of insanity, have been proposed two plans, viz., the "Cottage System," and "Separate Provision for the Chronic Insane Poor." An institution upon the latter plan is now (since 1869) in successful operation at Ovid, N. Y., and is known as the "Willard Asylum for the Insane." The cottage system has not yet been tested to any great extent in this country.

It is our purpose to consider in this paper the latter system only, as compared with the present, or hospital system. We would say, however, regarding this institution for the chronic insane—the Willard Asylum—judging from the reports, that it is, or will be, essentially the same thing as the so-called cottage system. The only difference is an absence of the recent cases, and, as a starting-point, large buildings; the extensions, as proposed, are to be by groups of smaller buildings.

From what we have observed during an experience of some years with the insane, we are led to the belief that the question of provision is one easy of solution; indeed, we can see no reason why it should be considered so difficult and complicated, unless it be that their *real needs*, with respect to building, are not understood. The reasons upon which this belief is grounded will appear when we come to relate our experience, which will be somewhat in detail. Before proceeding to do this, however, it will be best, in order that the subject may be the better understood, to give a brief description of the two systems (as regards the buildings) under consideration.

The prevailing system or plan (called "congregate," or "close" hospital) is this: a centre or administrative building, with wings extending from each side. These wings are three and four stories in height, with thick and massive walls. The centre building, which is higher than the wings, divides the sexes. These hospital or asylum buildings contain from four to six hundred patients, the sexes, as a general thing, being about equal as to numbers. Among them will be found all varieties of mental disease. This necessitates classification, and, in order to do this, the wings are divided off into wards. As to the sleeping-space within the wards, only about one-quarter of the patients, on the average, in State institutions, get single rooms; the remainder have to associate together in varying numbers.

The cottage system, as advocated by Drs. Jarvis, McFarland, Lee, Bemis, and others, is: a building adapted to the treatment of acute cases, and the safe keeping of all others requiring the strongest form of restraint;[1] and, supplementary to this hospital-building, a group of two-story houses on one side for males, and a similar group for females on the other. These houses or cottages (the name matters but little), some recommend, should be large enough to accommodate as many as forty patients; others recommend a smaller size.

Those who have advocated this plan believe that, as a whole, the insane do not need, simply as a place of abode, the costly hospital structure, that only about one-third of the whole number to be found in any community require it, while the other two-thirds can be cared for just as well in buildings of a less expensive nature. We quote from the late Dr. Chas. A. Lee:[2] "In the view of most people, all the insane are classed in one category, and close confinement within an asylum is deemed the only panacea, very little discrimination being exercised, . . . while the important fact is overlooked that a vast majority of the insane are quiet, harmless, chronic cases, who only need moderate supervision. But, for the acute, violent cases, *curative hospitals* are indispensable. . . . Theoretically it is assumed that each State is both able and willing to build large and expensive asylums for all its insane, and multiply them as fast as occasion required, for the reception and accommodation of the whole class. But no State has yet done it, nor is it probable ever will do it. *The whole plan has been conceived in ignorance of the true ratio of increase of chronic lunacy, and in ignorance of the result in foreign countries, especially in Great Britain, where it has met with signal failure.*"

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[1] The word "restraint," as here used in this paper, has reference to the buildings or surroundings of the patient, not mechanical apparatus used in certain cases.

[2] *See* paper entitled "Provision for the Insane," prepared by Dr. Chas. A. Lee, of Peekskill, N. Y., for the Western Social Science Association, at Chicago, June 8 and 9, 1870, and published in the "First Biennial Report of the Commissioners of Public Charities" of Illinois.

John B. Chapin, M. D., Superintendent of the Willard Asylum for the Insane, in a pamphlet entitled "Provision for the Chronic Insane," alluding to the different classes of cases to be found in every asylum (page 12), says: "For the care and treatment of those cases requiring restraint and immediate medical attention and inspection, a building of proportions much reduced below the usual standard would answer every requirement. . . . An auxiliary organization, or an organization supplementing the hospital, should comprise arrangements for the custodial care of the quiet, harmless, and manageable insane, mostly of the chronic class. Two-thirds of the insane are of this class. This organization should be in the nature of a colony, made up of detached buildings, for both sexes, having the relation of contiguity to the hospital. It would supplement the hospital by affording more extensive facilities for classification. While the hospital building would furnish the extreme of restraint, the colony organization would reduce it to the simplest form of surveillance." Further on (page 14), speaking of asylum buildings, Dr. Chapin says: "There is no doubt that the great expense attending the erection and operation of our asylums for the insane has proved the greatest embarrassment to their multiplication. . . . If, for instance, a State with the population of New York were to determine to place all her insane in asylums, upon plans usually adopted, the sum of six million dollars, at least, would be required. Provision would still be necessary to meet the annual expectancy. What prospect there is that any populous State will accomplish the result of placing all its insane in asylums, they can best answer who labor with Legislatures to secure the moderate sums yearly asked for repairs and improvements of buildings already erected. No State, at home or abroad, has yet been able to place all its insane in asylums on the present plans, and never will be able to do so, unless great concessions are made in this respect."

We quote from Dr. George Cook,[1] of Canandaigua, New York: "The great mass of the chronic insane have never been, and never will be, provided for in such" (present style) "hospitals. Nor is it necessary for their best good that the State should incur the great expense of erecting hospitals, with all the appliances for curative treatment, for the great number of chronic insane. There are obstacles in the way of hospital provisions for *all* the insane poor, which have hitherto been insurmountable, and which will continue, in all the future, to bar the way to any real progress in this direction. These obstacles are the great cost of hospital construction under the present system. . . ."

Regarding our own observations, our experience has been principally with the chronic class.

We would divide the insane, as regards restraint, into three classes: 1. Cases requiring the strongest form; 2. Cases requiring only a modified form; and, 3. Those requiring no restraint whatever.

The *first* class is made up of cases of acute mania, the dangerous chronic insane, some (not all) of the epileptic, the homicidal, suicidal, and some of those whose sole object is to get away. The *second* class is made up of cases of senile dementia, and some cases of chronic mania, dementia, imbecility, and epilepsy. The *third* class is composed of convalescents, patients with a slight derangement who are conscious of their malady, many cases of chronic mania, a majority of the cases of dementia and imbecility, and a part of the epileptics.

Now, it can be ascertained without difficulty—though it requires time—how many there are of each class in a given number congregated together, and the degree of restraint and supervision that is required for each. Take the insane, as a whole, in the different States, and but little difference will be found. Cases of acute mania, melancholia, etc., will occur in about the same relative proportions in one part of the country as in another. The thing to know is, taking the whole insane population of any section, the proportions going to form the three classes into which we have divided them. This fact once ascertained, the question of provision ought to be easy of solution.

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[1] *See* Dr. Cook's pamphlet entitled "Care and Treatment of the Insane Poor;" being remarks before the American Social Science Association, at New York, 1867.

As bearing upon this question, we give below, in tabular form, some facts, gathered up through a series of years, as to the habits and disposition of the chronic insane, with reference to the amount of restraint and surveillance they need. *All transient cases are excluded.* The facts shown by this table relate only to the male side of the house. For reasons, the same practice, as to trusting patients out, could not be extended to the female side; but, if it had been practicable, which it was not, with building operations going on, and grounds uninclosed, we think a nearly similar result would have been arrived at:

YEAR.	1869	1870	1871	1872	1873[1]
Average daily number present, round numbers...........	109	115	120	131	139
Number employed on farm steadily, and including a few who were constantly out alone—non-workers	29	35	37	55	60
Additional number considered safe to be trusted out alone, but for reasons were not so trusted.............	19	20	23	22	20
This last, added to the number actually out, gives........	48	55	60	77	80
Of average number present, per cent. actually out.......	26.+	30.+	30.+	42.	42.+
Of average number present, per cent. of *whole* number that could be trusted	44.+	47.+	50.	58.+	57.+

The "number employed on farm steadily," and otherwise out, were those who could be, and were habitually, left without supervision; and *no case is included in this number that had to be watched*—none but those who could be trusted throughout the entire year, with barely two exceptions.[2]

The "additional number" considered safe, so far as elopement was concerned, were not trusted out for these reasons: some were cases of extreme dementia, and had no desire or though of going out; some were physically disabled, and could not travel up and down stairs easily; others, cases of mild chronic mania, never wanted to go out, and some of them even could not be easily forced out. The sudden increase of the number actually trusted alone after the year 1871 is explained by the fact that two cottages, to be referred to hereafter, were then opened.

[1] Ten months.

[2] Periodical excitement. One man every few months would have to be kept in a few days; the other a few days every five or six weeks.

Regarding elopements of those who were habitually trusted out, only two went off in each year respectively, up to the fifth, when four went off. Elopements from this class are of no particular moment, as these patients are harmless.

It will thus be seen, according to the foregoing table, that one-half, in round numbers, of the chronic insane may be intrusted with their entire freedom, so far as elopement is concerned. Now, if so great a number require so little restraint, why is it necessary to erect for this class the costly hospital structure? They require no more medical treatment than so many sane persons; they are peaceable and orderly. And the same may be said, so far as "treatment" is concerned, of all those belonging to the *second* class. The characteristics of the latter class are briefly these: They require looking after if out; they are not destructive to the building, with the intention of getting away; some at times are excitable and noisy, yet harmless; some need mechanical restraint at times—the same as they would get if in the wards of a hospital—in order to prevent destruction of clothing, etc. As to the proportion of the insane of this class, according to our observations, we find that about thirty-five per cent. can be thus classed. This, then, would leave only about fifteen per cent. (of the chronic class) to provide for in the "close" hospital. This number we have denominated the *first* class. It is needless to repeat here their characteristics.

Having determined, then, as to the needs (respecting restraint) of the chronic insane, this question arises: Supposing an institution is to be established upon the cottage-basis, of all the cases of recent and chronic insanity occurring, what proportion of them will require the "close" hospital? As previously stated, it is the opinion of those who favor the non-hospital policy, that not more than one-third require the close hospital. This is certainly placing the number of this class high enough; and our own opinion is that not more than one-quarter of the whole would need it, supposing that the fifteen per cent. above mentioned (chronic) *must* be put into the hospital.

In support of the opinion that the insane require, as a place of abode, only an ordinary building, we have some experience to relate respecting two cottages which have been in operation, and under our observation, since December, 1871. These cottages were two old wooden houses near each other, and distant a few rods from the main building. They were fitted up and opened in December, 1871. Fourteen males were placed in one, and fifteen females in the other; two attendants in charge of each. The patients were of the chronic class. The food was supplied from the main building.

In the sixth annual report of the trustees, the superintendent, Dr. A. M. Shew, referring to these cottages, says: "Sufficient time has elapsed to convince me that, under more favorable circumstances, the 'cottage system' can be made to play an important part in connection with a regular organized hospital. There is a certain air of social comfort, more like the ordinary home-life, pervading these cottages, than can be found in the wards of a hospital."

After another year's experience with these cottages, Dr. Shew, in the next (seventh) Report, thus speaks of them:

"I can conscientiously and gladly confirm what our last report contained on this subject. In spite of the crude and disadvantageous way in which we are making trial of it, the results are favorable. It will be pleasant to the friends of the insane to know that in the women's cottage, containing, as the average of the year past, about fifteen, almost wholly of the demented class, there has been no special sickness, no quarreling, and their being thus grouped under sagacious attendants has developed a power of setting themselves to work which has surprised us. For example, 64 pairs of stockings have been knit, 84 towels and 140 yards of toweling have been hemmed for our new north wing, 52 handkerchiefs and 30 bed-spreads were hemmed, and much repairing done, and all this from our most mentally wrecked ones.

"It shows that, with wise attendants, much happiness may be brought by suitable employments, even to such wretched ones, besides giving substantial results for the institution. The very success with our imperfect little cottages makes me long for the day when it will be in your power to order the erection of more structures adapted expressly to the wants of the men and women who would be benefited by the cottage system."

Other important points which these cottages have established are, in regard to the matter of construction, the kind of building and appliances necessary, and the work of taking care of these buildings and inmates.

No water-closets were introduced into these cottages—only water for bathing and cleaning purposes—the hot water used being generated by means of a stove. Instead of water-closets, earth-closets were put in, but they were soon abandoned, and the usual style of country privy, detached, substituted. With the latter system there has been no trouble whatever. We have been assured repeatedly by the attendants that it works satisfactorily. This is an important consideration, for if there is, in a hospital building, any one appliance that is expensive, not only as regards first, but continual cost, it is the water-closet system. Besides being costly and taking up space, which is also costly, it must, of necessity, be connected with the sewerage; and, as institutions, in general, fail to utilize the sewerage, a thing of immense value is thus lost to the hospital farm. No such loss would occur where cottages exist with the detached privy arrangement.

With respect to the number of attendants at these cottages, we have been told by them that twice the number of patients (thirty) could have been cared for just as easily, had the buildings been larger and adapted to the purpose. The transportation of the food and supplies from the main building, and the clothing to and from the laundry, has been done, from the beginning, by two of the male (cottage) patients for both cottages.

These patients readily learned to perform this work, and soon could do it even without an accompanying attendant. One of these was an old case, who had been for years lying around the hospital wards doing nothing.

As to elopements from these buildings, an inmate of the male cottage eloped twice within one month, after residing in it thirteen months. He had been in the institution twenty-one months, and out daily on the farm, and trusted everywhere. One elopement occurred from the female cottage. This patient, after her return to the institution, subsequently eloped from the main building. No other escapes occurred, although the patients had always, during pleasant weather, almost absolute liberty of the grounds, the door of the day-room being left open. The windows had only ordinary wooden blinds, which could be locked. During the heat of summer, however, they were left open for ventilation. No one took advantage of this, and ran off. Only one blind has been broken, and that was done by the patient who escaped from the male cottage.

To sum up, the two cottages in question have established: 1. That, in detached buildings of this kind, water-closets are not a necessary element in their construction; 2. That the amount of help need be no greater—other things being equal—than in the wards of a hospital; 3. That the labor of patients can be made available in the work pertaining to such structures; 4. That such patients as were placed in them are no more liable to escape than they would be from the main building; and, 5. That detached buildings—a portion at least—for the insane may be, if thought desirable, constructed of wood.

Now, if it has been shown that a portion of the chronic insane can be successfully cared for in ordinary detached buildings, why cannot all that are fit be thus provided for?

The minimum cost of the hospital, *per capita*, is fifteen hundred dollars;[1] and from this amount it runs up to three, and perhaps four thousand dollars.

Is this expenditure, taking the lowest even, really necessary for every insane person, no matter what the character of the case may be? Does a quiet, harmless, insane female need the same surroundings (building) as a powerful, destructive, and violent male patient? We must confess, that to us the idea seems absurd. Dr. McFarland (formerly Superintendent of the State Asylum at Jacksonville, Ill.) truly says: "The present system of architectural construction adapts the entire institution to the demands of its smallest and worst class; while for the great majority all of these appliances are wholly unnecessary."

Says Dr. Chapin:[2] "Appreciating the pecuniary considerations which we believe in the end will alone settle this question, the plans for these structures" (of the Willard Asylum) "are presented solely in the interests of a wise economy, and as being best adapted to the actual condition of the insane. Under this plan, we believe it practicable to place every insane person in the State in buildings costing less than eight hundred dollars per patient. If, however, it is thought better to place all these persons in buildings costing from two thousand to four thousand dollars per patient, I will not object, though in the name of charity I must express the opinion that it is an expenditure wholly unnecessary."

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[1] *See* discussions of the question of the cost of asylums, by the Association of Superintendents, published in the October number of the *American Journal of Insanity*, 1870.

[2] "Second Annual Report of the Trustees of the Willard Asylum."

The utter inadequacy of the hospital system—which the Superintendents' Association still recommend to Legislatures as the best and wisest policy—to meet the demands of the dependent insane is shown by the Board of Commissioners of Public Charities of the State of New York in their Fifth Annual Report. The subject of additional provision for the insane is discussed. They find that when the Willard Asylum is completed, with capacity to accommodate twelve hundred patients, there will still be left in the almshouses about as many more. "If, then," say the commissioners (page 24), "so large a number of the chronic pauper insane are to remain unprovided for, after the completion of a capacious institution like the Willard Asylum, the question now pressing itself upon the attention of the State is, What disposition shall be made of those hereafter remaining in the inferior county poor-houses, and whose condition of discomfort will be analogous to that which the Willard Asylum was specially founded to remedy? If the principles upon which this institution was established were just in relation to a portion of the insane, and yet cannot reach the whole by reason of the inexpediency of enlarging its capacity indefinitely, so as to form an insane colony, then it behooves the State to consider whether, by some slight modification of those same principles, the desired end cannot be reached satisfactorily and for all time. . . . By the erection of plain, inexpensive buildings in connection with the already existing asylums, it is believed that the problem may be solved."

The Massachusetts Board of Charities are confronted with a similar condition of things in their State. In their "Ninth Annual Report," on pages 54 and 55, we find these words: "It is worth the serious consideration of the Legislature, whether it would not be well to provide another receptacle for chronic and harmless lunatics, epileptics, and idiots.

"Upon principles accepted by experts in the management of the insane, and upon theoretical grounds, there are strong objections to an establishment founded in the idea of the incurability of lunacy, even of twenty years' standing. It seems like burying in a tomb a body which may possibly come to life.

"But most of these objections disappear upon an inspection of the establishment at Tewksbury" (where there are three hundred chronic insane). "There is a competent medical superintendent always at hand ready to recommend the removal to a curative hospital of any patient who may need special treatment. The patients are all well housed, well clad, and well fed. Very few of them ever enjoyed, when at large, so many of the plain comforts of life as they now do.

"They perform far more labor which is profitable to the establishment and beneficial to themselves, than do the patients in any of the hospitals in which labor is not usually exacted."

At London, Ontario, although a new asylum has been established within a recent period, the want of more room is already beginning to be felt.

Dr. Henry Landor, the superintendent, in his report, ending September 30, 1872, to Inspector Langmuir, says: "I am glad to find that you are prepared to recommend the erection of cottages for the chronic patients, male and female, who are able to behave themselves with propriety. The more consideration given to the cottage system, the more it will commend itself to your judgment."

The system of providing for all the varieties of insanity in large, massive buildings, is purely traditional. "It appears," says Dr. McFarland,[1] "that the existing form of the hospital for the insane—a corridor running between two series of cells

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[1] "First Biennial Report of the Illinois Board of State Charities," 1870. Dr. McFarland's address.

—may be traced, in its origin, to a period antedating the Reformation. The great reformation in the treatment of the insane, inaugurated at the close of the last century, at the time of the French Revolution, has not changed the form of their abode."

It is to this traditional system that the Association of Superintendents of American Asylums still adheres as a body; a few individual members, however, have stepped out of the beaten track, and advocate a change.

The English Commissioners in Lunacy, who have been at work at this problem much longer than the American Association, have come to a different conclusion than the latter; for the English commissioners recommend, for certain classes, not hospital buildings, but the following: "Cottages or buildings of a cheap and simple character, consisting merely of associated day-rooms and dormitories, without long corridors or other expensive arrangements, should be provided for the use of the working patients. . . . Provision of an equally simple and inexpensive description should also be made for a portion of the idiotic and epileptic patients, and also for chronic cases."

We do not urge the cottage plan merely upon sentimental grounds, such as the plea of "more liberty;" or that patients would see less of "barred windows and locked doors;" or that the cottages would look more "home-like;" these are minor considerations. We do it for these reasons: 1. We believe that, so far as the restraint afforded by a building is concerned, it is all the insane need; 2. That the occupants of such buildings will be healthier (fewer cases of debility) and happier, for the reason that, being on the ground-floor, access to the yard is easy at all times, enabling them to get more of the out-of-door life, which they so greatly need, and which so many enjoy. From the wards of a large building there are necessarily many impediments in the way of an easy egress and ingress; and hence, the feeble and helpless that are above the first story suffer from a want of this change; 3. A greater number will be induced to work, for the reason that they will be more accessible; they can be more easily prepared for work and collected from cottages than from the wards of a large building. Many could be induced to work about the grounds of a cottage that one would never think of taking from the wards to do any thing; 4. That, costing less *per capita* than the hospital structure—less expended in mere building—more could be expended for personal comforts for the patients; 5. On account of fire—a most important consideration. Within a few years, several asylum buildings have been destroyed by fire. A calamity of this kind involves the State in a loss of many hundred thousand dollars, besides turning adrift several hundred insane persons, who have to be placed in other asylums that are perhaps already full. The burning of a cottage would not involve the whole institution in ruins, and the loss would be comparatively nothing. In a few months it could be restored, whereas it would require almost as many years to restore the hospital structure.

[TO BE CONTINUED.]

ART. III.—*The Medicine of Theory and the Medicine of Nature.* By W. R. BARTLETT, M. D., New Haven, Conn.

THE province of medicine is to cure. This is the statement in general terms, the proposition in its broadest sense. Disease is the foe; how shall it be conquered? When and where shall the art we style medicine step into the arena? This has been the question, in one shape or another, for all time. The cure of human ills has ever been an object of solicitude in diversified ways, perhance by incantation and ritualistic mummery, the laying on of hands, or the direct application of remedial agents, the uplifted prayer, or Nature has been trusted to almost alone. To-day we say medicine has made progress, and has good right to claim a place among the enlightened sciences of the world. Yet are we not far from the desired end—the thorough mastery of disease and the full knowledge of its causes and laws? How, then, can we say, vauntingly, we have made great progress? Does not the same hard, old problem remain? Does not the plain, bare fact remain that never was sickness more prevalent than now? Looking back over the vista of the past, passing in review the varied machinery of the art, examining the many methods of treatment, and then turning to the present, in its hot chase of progress, throwing aside those ideas of the past, and then so many times coming to realize their truth, and to find a seemingly new discovery to be an old foundation-stone unearthed from accumulated rubbish, must we not conclude that much of our progress is simply a change and not an advance; an idea of to-day only to be disproved to-morrow; or, at best, a more simple and elegant way of doing what really was done long ago? This brings me to the pith of the question which I am to discuss, viz.: How much, in the cure of disease, is due to Nature, and how much to Art? To answer it, let us look at the facts closely, and weigh them: 1. The tendency of Nature is toward a cure, except in rare cases. 2. What does Art attempt? It endeavors to cure by carrying out some theory which, by a process of reason or by experience, is believed to conduce toward health. Now, whether it is so depends upon two things principally—a knowledge of the precise effect of the agent upon the organism, and whether that effect produced in a given diseased state would conduce toward health. Any thing short of this is empiricism as a literal fact, yet not in common acceptation. Is there a single drug whose full, complete effect we know from the time of its entrance into the system to that of its elimination? The effects of some we are familiar with to a great degree: we know those which are most marked, and expect them to be produced when the agent is administered, but yet how little do we know of their remote effects masked by those more prominent! And then, to go a step further and inquire how these effects are produced, and we at once step into that realm of inquiry and theory which all the labors of science and experiment have not fully penetrated. To-day we ask the question, How do medicines act? and the answer is an undemonstrated theory. Take an agent, for instance, which has been in use for years; we ought to be familiar with its *modus operandi*, if experience and research can make us so, yet only up to a certain point are we. I question if to-day we know more of the just and proper use of opium than did the ancients. We can tell how, by absorption, it produces sedation; how, by contact with the peripheral

extremities of the nerves, it deadens sensibility, and that is about all. Sleep we know it does produce, but how does it cause constipation, congestion of the brain, or contraction of the pupil? Headland to-day confesses that all in regard to it is mere theory, and "that any attempt to give order of sequence to these symptoms, or express them on the principle of mutual dependence, involves in a maze of contradictions, doubts, and difficulties;" and the best he can say in regard to its power over the nervous system is this: "I conceive it to be by a certain intimate or molecular relation existing between the particles of the agent and the particles of the nerve acted upon." We have it, to be sure, in a more elegant shape, concentrated in the form of morphia, codeia, and other kindred preparations, but it is opium still, and acts essentially as it did in years now long gone. If, then, knowing so much, and yet so little, of this "sheet-anchor" of our profession, how little do we know of many other agents more multifarious in their powers, and less studied, both by actual trial and reasonable theorizing! Now, take an agent, bromide of potash, for instance, a product of to-day. We know probably as much as to its method of working as we do of opium, yet it is very evident that we have only just begun to have a full and true appreciation of its merits and demerits. With all the light of modern science, with all the unfoldings of chemistry, with all our knowledge of physiology, we could not put that one article in its true place, but as eagerly, and apparently as blindly, did we hail it as did our fathers some simple vegetable product long ago. What I mean to enforce is, that to-day our knowledge of medicinal agents is so unsettled and inexact, that the great body of the profession cannot carry it out in rational practice, except in a *general* way. And now, proceeding to the second point, the consideration as to whether a given agent, producing a given effect on the human organism, will produce a correlative effect in a diseased state, and so conduce toward health, we have a more difficult field than before, we come to the practical application of medicine for the cure of disease. Now, if ever, a theory exact and infallible is needed. Now, if ever, we ought to be able to demonstrate the effect of the agent with the certainty of a mathematical problem. An exact science demands of us ability to follow our agent in all its workings through all the various avenues of the system. The astronomer can calculate the revolutions of the starry worlds as they wheel through space, can tell of the comet's return, or the moon's eclipse, to a certainty. The engineer knows how much steam is required to roll the ponderous driving-wheels of his enginery at forty miles per hour, and how little at five; he knows how it is evolved, how it enters the cylinder and moves the piston-rod. Have we a corresponding knowledge of any medicinal agent? Can we tell the exact amount of sedation our dose of opium will produce? Are we assured that it will give just the result we desire? Alas! how often have we been doomed to disappointment! Are we sure that castor-oil will stop a dysenteric flow, or opium a simple intestinal diarrhœa? Are we not many times sorely puzzled as to which we ought to administer? And why is this? Simply because we are just outside the realm of certainty, in the region of probability. The mysteries of the malady are too deep for us; its bounds are not set, or, if they are, with sudden rush it may burst them. We cannot, like the astronomer with telescopic eye, gaze upon the deep impenetrable with clear, unerring vision, and read its mighty secrets. Take, for instance, a fever: pathology tells us of its visible effects upon some of the more important organs. We know some of its effects upon the kidneys as manifested in the urine. The microscope gives us some idea of the alteration which the blood undergoes. Analogy enables us to judge as to its probable course and termination. We are able to tell if it tends to the brain, lungs, or viscera. But what is it? What is its essence? The mighty ones of our time may well ask, with the sage of old, "*Quid est febris?*" And again, what is its antidote? How miserable we are, for in this late day, resplendent with the glory of scientific achievement, we must humbly say we do not know. We praise to the skies that one agent quinine, for its power over intermittent, but the secret of that power is hidden from our sight. But why multiply? Is it not plain that we know not, as we ought, the powers of the implements of our art? Then what is the physician's province? I answer, he is the enlightened servant of Nature; he cannot rise to lordship as yet, whatever he may do in the future; he must be content to walk under her leadership. A king expects of a faithful subject not only duty but aid, never arrogance, never the forgetfulness of his supremacy, whether in time of prosperity or reverse, for, if the ruler falls, the kingdom is lost. So Nature rules: if she sinks, we die. There is just as much difference between the enlightened perception of duty toward her and ignorant assumption, as there is between true and false serving of a man clothed with kingly authority. "But," says one, "this is degrading medicine; it had better be dispensed with altogether. What is the use of training-schools if you trust to Nature? Then the charlatan is as good a physician as he who has spent the labor of years in preparation for his work." I reply that he is as trustworthy and as competent if the great central fact of Nature's sovereignty is ignored, and the practice is one based upon mere theory; it is the two combined—Nature first, theory last, and he who can so combine them as to produce harmony is the best master of his profession. He who follows a set theory in the treatment of disease is like a bewildered traveler where many roads converge; he knows not which to take; one is as smooth and straight as the other, and only when his eye rests upon the pointed finger of the guide-board dare he go his way. To the enlightened physician standing all confused amid a maze of theories, the injunction "Follow Nature!" is a word of precious meaning. But, again, it may be urged: "Your talk is all for nothing; are not the most accepted theories of to-day based upon the laws of Nature? Then Nature must be of a very accommodating disposition, and as mutable as the wind, and a very weak sort of a mother indeed." No; very many times they are but the preconceived ideas of those desirous of a high position as men of science, and every analysis and deduction is made to tend to a demonstration of some one theory. To specify, take the most favorite theory in regard to typhoid fever, that it is a disease of depression, consequently our main reliance must be upon stimulants, both alcoholic and animal. Already I believe a reaction has begun to take place, and the sentiment is gaining ground that this matter has been carried too far, and how soon may the time come when alcoholic stimulation will be looked upon with as much aversion as bloodletting now is, as a *regular systematic method* of treating typhoid fever! Then there is another disease, illustrating still more markedly the multiplicity of theories; that is, tuberculosis of the lungs. Acting upon different views, practitioners have used a long succession of remedies, but to how little purpose! It is consumption still, and never more formidable than now, and he is the most successful in its treatment who is content to follow the dictates of Nature. I might refer to membranous croup: one says, use strong local applications, on one theory; another, calomel, on a second; another, nothing at all. That is what I consider to be theory without reason, and the treatment of a name rather than a disease. Although it is not my purpose to bring surgery into this discussion, yet one illustration bears so directly upon this point that I will dwell upon it for a moment. There was a time, and not very long ago either, when it was taught as a doctrine that Nature was not competent to bring about a healthy and permanent union of wounds unless tortured to it by means of boiling oil, or the actual cautery, or some persistent application of unguents. To-day we find that the simpler and fewer the applications the better, and all that is asked of us is occasionally to give Nature a helping hand: hers it is to fill the gap, ours to give enlightened aid. This, I believe, is an illustration of the great law that should govern us as physicians; if cure is to be wrought, it must be done by ministering to the varying demands of Nature in the course of the disease. Of course, much of this must be done by remedial agents. We cannot use them on the highest plane of scientific knowledge, so must take the lower, and here our error is more likely to be in relying too much upon medicine than too little; and, if the patient recovers, congratulating ourselves upon our success, we are very apt to give too little credit to the method of Nature in the work. Now, as to the practical deductions to which this subject leads, it appears to me they are these:

1. That, while we have made great progress in *means of*

application, we have not advanced very far in our knowledge of the *primal laws* and *causes of disease.*

2. That it is our duty, from which we may expect much good to result, to study the *extrinsic causes of disease.*

Will the method of research of to-day bring about all these desired results? Physiological chemistry promises great things for the future, and her most enthusiastic devotees look forward to the time when in the laboratory will be built up the organic constituents of the human body. Scientists laboring in kindred fields are developing facts which cannot but be of benefit to practical medicine. There is a growing tendency in the profession to broad and liberal views, and a seeking after those external causes of disease more than ever before, and here, I believe, is a field of promise. Did we possess a thorough and well-regulated system of medical statistics, what a benefit would result! This has recently been demonstrated more than once by investigation. The prevention of disease. That, surely, is a noble branch of our art, and a field full of promise for investigation, and one far from being thoroughly explored. Why is it that Asiatic cholera leaves its home in the crowded, dirty cities of the Old World, and, on its Western pilgrimage, stops not at its looked-for destination amid the reeking filth of New York, but passes far on beyond to inland towns of the West? The increased interest taken in reformatory institutions for the insane, the idiotic, the indigent, the inebriate, speaks well for time to come. And then, too, the subject of intermarriage, which of late has excited some attention, is one which the profession would do well to take hold of in a definite manner. In all these last-mentioned branches of investigation do I see a cup of the medicine of Nature brimful of hope to the world. In closing his address on the derivation and development of the lower orders of life, Prof. Huxley says (after speaking of the results that will grow from the discovery of the nature of *pébrine*, a disease of the silkworm): "Looking back over only ten years it is possible to select three in which the total number of deaths from scarlet fever alone amounted to ninety thousand. The facts which I have placed before you must leave the least sanguine without a doubt that the nature and causes of this scourge will one day be as well known as those of *pébrine* are now, and that the long-suffered massacre of our innocents will come to an end, and then mankind will have one more admonition that the people perish for lack of knowledge, and that the alleviation of the miseries and the promotion of the welfare of mankind must be sought by those who will not lose their pains in that diligent, patient, loving study of all the multifarious aspects of Nature, the results of which constitute exact knowledge or science." A spirit of vain confidence is not wise, but rather, as he says, of patient endeavor. And if we fondly think we have reached as yet the highest plane of medical knowledge, it will be as we sometimes see in a day of clouds and storm, of a sudden they seem to thin and the blackness melts away, and the bright sunlight almost breaks through, but again a murky mass rolls up, and the gloom is deeper than before.

ART. IV.—*Peristaltic Arterial Action; Objections to this Theory.* By JOHN J. MASON, M. D., New York.

THE physiology of that part of the nervous system which is concerned in regulating the quantity of blood in the tissues is a branch of medical science second to no other in importance, and one which will always hold high rank as an object of special study. The fact that some physicians seem weary of the subject only proves the rule; as, in literature, culture loses none of its claims on authors because it may have become to them a wearisome word. It is from no lack of intrinsic merit, therefore, that the region of the vaso-motor nerves remains so little explored, but from a lack of exact experiments which shall lay a solid basis for further research.

At present all our most distinguished physiologists agree that narrowing of the calibre of the arterioles may be induced by stimulating their accompanying nerve-fibres, and that a widening of the calibre of these vessels may be brought about by paralysis of the same nerves. Certain cases, however, of apparent widening of the calibre of the vessels are explained by one physiologist, on the supposition that an antagonism exists between the action of the sympathetic and *cerebro-spinal* *nervous systems;* according to another, the vessels dilate actively; another explains by introducing reflex action; another speaks of "*l'action paralysant;*" and again we have the theory of widening by passive dilatation caused by attracted blood.

This being the actual condition of things as regards the vaso-motor nerves, it is clearly the duty of the experimenter to note as many facts as possible which may tend to bring order out of this chaos; and evidently, with this aim in view, a theory has been resuscitated by two accomplished physiologists in Paris, earnestly advocated and already made by them the basis of several electro-therapeutical applications. In their own words the following is their classification of the functions of the nerves in question:

1. Spasmodic contraction of the vessels by violent excitation of the vaso-motor nerves.

2. Passive dilatation by paralysis of the vaso-motor nerves or by their fatigue.

3. Automatic peristaltic contraction, favoring the flow of blood, and regulating it according to the functions to be performed, and according to the activity peculiar to each organ.[1]

The object of this article is to present some facts and considerations which seem opposed to the theory of peristaltic arterial action, which, though by no means new, rests upon recent experiments that seem to invite repetition and free criticism. We will first notice those made on the membranes of frogs, etc., with the aid of the microscope.

MM. Legros and Onimus found that a continuous galvanic current passing from the trunk toward the terminal branches of an artery accelerated the circulation in the parts which this vessel supplied, while the circulation was generally retarded during the passage of a current in the opposite direction. I have often been able to confirm these observations, and have succeeded in demonstrating their accuracy to a class of twenty. The tongue of the animal seems to give the most constant results in these as in other experiments on the peripheral circulation.

After ligating the heart or main arteries, or causing the arrest of the former by the faradaic current, contrary to the statement of these gentlemen, and in accordance with the views of M. Ranvier, I have never seen the circulation continue beyond a degree clearly determined by the resilient action of the elastic coats of the arteries.

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[1] "Des Nerfs vaso-moteur," Dr. Ch. Legros, Thèse d'Agrégation, 1873. Also see "Electricité Médical," Onimus et Legros, pp. 158–189, 1872.

It is claimed that the circulation does continue under these circumstances, and that this continuance of the flow of blood in the capillaries, together with the phenomena produced by the continuous galvanic current, can only be explained by admitting peristaltic action as one of the functions of the small arteries; that the arterial blood-waves dilate successively corresponding segments of the vessel, which contract immediately behind each wave, and thereby assist in propelling the blood; that this vermicular action of the vessel is presided over by its nerves, which are mildly stimulated by the descending galvanic current, and paralyzed by the ascending current. The reasoning seems to be: Assuming that the descending current stimulates, peristaltic action is probable, otherwise the circulation would be retarded. But why assume that the descending current has this action, rather than that it paralyzes? During the passage of an electric current in this direction the larger nerve-bundles of the artery are under the influence of the positive pole, and their irritability is therefore diminished, for the current, where it enters the tissues, acts in this case with greater density and intensity upon the larger nerve-bundles; i. e., anelectrotonus predominates over cathelectrotonus. Theoretically, therefore, the descending current ought especially to be the paralyzing current. .

When the current is reversed, the larger nerve-bundles come under the action of the negative pole, and they are stimulated rather than paralyzed. Here we suppose something, and give a reason. There can be no reason given why the descending current alone stimulates, except that this supposition favors the theory of peristaltic action.[1]

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[1] MM. Onimus and Legros deny the existence of electrotonus in Pflüger's sense, and account for his results by assuming a sufficient action of currents of polarization. Polar, electrotonic action does exist, *per se*, under conditions which exclude the existence of currents of polarization. This can be proved beyond question.

Furthermore, there is a theoretical objection, still stronger than the above, to the theory of rhythmical contractions in the arteries, and this is to be found in the physiological difference which exists between the two grand classes of muscular elements—"*Les fibres lisses ont une action moins prompte;*" to use the words of the advocates of this theory, the unstriped fibres respond less promptly to stimulus than do the striped fibres. We are hardly prepared, therefore, for what follows in their treatise after a few pages, the substance of which has been stated above. Of course, if we are to suppose that the circulation is assisted by vermicular contractions of the arteries, these contractions must occur behind each blood-wave, and act immediately in response to the shock imparted by the wave; i. e., synchronously with the heart. Non-synchronous, slow contractions would be obstacles to the succeeding waves, and would, therefore, hinder the circulation. Now, from what, as we have seen, these authors admit, the unstriped fibres of the vessels cannot contract synchronously with the striped fibres of the heart, and hence their contraction can only oppose an obstacle to the flow of blood.[1]

The following experiments[2] on different erectile organs, such as the crest of the turkey and penis of the dog, seem, at first sight, to furnish a strong argument in support of the theory which we are opposing. Division of the cervical sympathetic in the neck of the turkey was not followed by erection of the crest, while the organ on the healthy side became erect when the animal was excited. In dogs, division of all (?) the vaso-motor nerves supplying the genital organs abolished (?) completely erection of the penis, while, by passing a thread lightly about these nerves, the organ became erect. Continuous galvanic currents applied directly to these nerves never induced erection. From these results they conclude, and as a fact "incontestably demonstrated," that the afflux of blood in the erectile tissues was not the result of a paralysis of the vaso-motor nerves, but of an excitation. Now, if there were no defect in these experiments, it might still be urged that, as the erectile structures have a special function and anatomy, we are not warranted in applying observations made on them, to explain the phenomena of the general circulation, and the same may be said of facts taken from the fœtal circulation, and from that in animals destitute of a heart. Non-rhythmical contractions undoubtedly occur in arteries which are exposed to certain abnormal influences, such as embolism and traumatic affections; but we may protest strongly against applying these facts toward proving a purely physiological point like the one under consideration, especially as these contractions have never been synchronous with those of the heart. To return to the experiments above cited, the difficulty of stimulating or dividing all the vaso-motor fibres in these organs, and that of effectually eliminating psychical influence on the part of the animal, seem to constitute two such important sources of error, that we can hardly regard the conclusion of these gentlemen as proved. The first experiments which these authors publish in their work on medical electricity, were made on dogs and rabbits, as follows:

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[1] That they gradually contract in a body, upon the current of blood, and partly in obedience to the impulse from the heart, offering thus an automatic self-regulating resistance to the passage of the blood, is a theory which I have advocated during the past four years. *See* "Pathogeny of the Infarctions and Experiments on the Tonicity of Arterioles," NEW YORK PSYCHOLOGICAL JOURNAL, April and October, 1872.

[2] Onimus and Legros.

A ligature was placed around the abdominal aorta, and a canula introduced into an opening made just below the ligature. Through the canula, colored water, and sometimes milk, was allowed to flow into the artery from a vessel placed two decimeters (about seven inches) above the animal. The liquid, in a few minutes, penetrated the capillaries, and oozed from an opening which had been made in the abdominal vein. The conclusion is drawn, that these experiments "demonstrate clearly the influence of arterial contractility on the circulation of liquids in the arteries." Now, one is forced to admit that the weight of a column of liquid, seven inches high, is not to be regarded as inconsiderable as a motor power, acting behind a liquid flowing through capillary tubes out of an open vein. The siphon principle, together with that of capillary attraction, in the absence of direct proof to the contrary, seems, therefore, to account satisfactorily for the rapid appearance of the liquid in the veins. However this may be, the employment of these results to explain what occurs in the normal circulation is not in the least degree warrantable, as we shall see. In the one case we have a continuous flow of liquid, while in the normal condition of things the blood flows in waves which have for their cause the heart's action. If, in the experiment above cited, the flow of the liquid was caused by vermicular contractions of the arteries, these contractions ought to be even more effective in favoring the flow of a wave-like current. In other words, the more closely we imitate Nature in making the stream wave-like, the larger ought to be the amount of liquid flowing from the vein in a given time.

EXPERIMENTS.[1]

"For injecting liquid into the arteries a spring enema syringe was used, attached to a fine brass canula by a caoutchouc tube, two feet in length and two millimetres in calibre. The liquid was returned from the vein by a similar canula and tube, from which a deep, graduated glass vessel was filled. Intervals of time were measured by a metronome. In order to produce a wave-like current in the arteries it was only necessary to press suddenly with a hard substance upon the first caoutchouc tube, at intervals corresponding closely with the beats of the animal's heart, and regulated by the metronome. By using two glass vessels, graduated exactly alike, the stream could be directed from one to the other, without stopping to empty the first one filled. The liquid used was milk in all cases, warmed to about the central temperature of the animal, and the pressure was regulated by the stop-cock of the syringe.

"In order to arrive at the influence of an intermission of the current upon the quantity of liquid flowing from the vein, it became necessary first to establish a constant ratio between the time required to fill the vessel with an intermittent, and that with a continuous stream. Before vivisection, therefore, I found that, with a continuous flow from the first caoutchouc tube, a time elapsed represented by seventeen beats of the metronome, and with the intermittent, thirty beats. The ratio, after several trials, was placed at $\frac{\text{continuous}}{\text{intermittent}}\,\frac{17}{30}$. The abdomen of the animal[2] was now opened, the canulæ tied in the vessels, and the quantity of liquid timed as before. The ratio now became $\frac{\text{continuous}}{\text{intermittent}}\,\frac{44}{84}$. By the rule of three we should expect less than 77.65 for our denominator, while, in reality,

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[1] My thanks are due to Dr. John Van Bibber, of Baltimore, who assisted on several occasions at these experiments.

[2] Rabbit.

we waited for 84 beats of the metronome before the vessel was filled by the intermittent stream (17 : 30 = 44 : 77.65). With another rabbit the ratio was $\frac{\text{continuous}}{\text{intermittent}}\ \frac{75}{152}$ (17 : 30 = 75 : 132.35); 152 beats against 132.35. In some of the experiments woorara was given, while in others no poison was employed. In all cases the animals were unusually vigorous, and the peristaltic movements of the intestines were always to be observed. Practically the result was invariable:

"The quantity of liquid flowing from the vein, when coming from an intermittent source, was always proportionally less than that coming from a continuous source, with or without woorara, and irrespective of the order in which the two quantities were measured."

It seems fair to claim, therefore, that something in the vessels of the animal alters the ratio between the quantities coming from the two currents. This something is not elasticity, for, if it were, the figures would be reversed. It is in no way of the nature of an accelerator of the flow. On the contrary, it seems to oppose an obstacle to the stream coming from an intermittent source, which it does not oppose to one coming from a steady, continuous source.

CONCLUSIONS.

a. The experiments which I have repeated on the action of the continuous galvanic current, upon the circulation, warrant the belief that the vaso-motor nerves are affected by the continuous electric current just as are the nerves of voluntary muscles; that the alternate acceleration and retardation of the flow of blood induced by different current directions in the vessels of the frog have their cause rather in electrotonus of the vaso-motor nerves than in modified peristaltic action of the arteries.

b. Experiments, in which a stream of liquid is used steadily flowing from a siphon-tube, fail to fulfill a most important condition; and that, when Nature is imitated by employing a stream from an intermittent source, the action of the arteries seems rather to retard than to accelerate its flow.

c. Rhythmical vermicular action of the vessels in order to be efficacious as an assistant to the circulation, must be synchronous with the contractions of the heart's ventricles. No such synchronous action has ever been seen, and its existence may be justly denied, on account of the comparative slowness with which the unstriped fibres enter into contraction.

d. Some of the experiments on erectile structures, which MM. Onimus and Legros have published, seem opposed to their theory, while the others tend rather to prove our ignorance of the precise mechanism of erection, than to establish an active motility of the arteries as its cause.

e. Our present knowledge of the functions of the vasal nerves and arterioles seems capable of expression, as follows:

1. Tonicity by normal innervation (direct or reflex).
2. Narrowing of calibre by increased innervation (direct or reflex).
3. Widening of calibre by diminished or suspended innervation.
4. Widening of calibre in special cases by a mechanism unknown, but seemingly analogous to that of the depressor nerve of MM. Ludwig and Cyon.

Clinical Records from Private and Hospital Practice.

I.—*A Case of Bony Anchylosis of the Hip-Joint, successfully treated by Subcutaneous Division of the Neck of the Femur.*[1] By H. B. Sands, M. D., Surgeon to the Bellevue and the Roosevelt Hospitals, etc.

I desire to exhibit to the Society a man upon whom I have operated successfully for bony anchylosis of the hip-joint, according to the method recommended by Mr. William Adams, of London, in 1870.[2]

The patient, Terence McGrath, a man twenty-five years of age, of fair constitution, but of somewhat irregular habits, suffered from a severe attack of articular rheumatism four years previous to the time of the operation. The disease was most acute in the lower extremities, especially in the right hip-joint, which was kept in a flexed position during the patient's convalescence. After the lapse of several months, he was able to leave his bed, but was unable to extend the right thigh, which, until the time when I first saw him, remained perfectly rigid. Pain in the right hip-joint continued for nearly a year after the first attack, when it disappeared altogether. On examination, I discovered anchylosis of the right hip-joint, in the position indicated in the accompanying photograph. The thigh was considerably abducted, and was flexed, so as to form an angle of 110° with the vertebral column. The patient could not rest the right foot on the ground without assuming a crouching attitude, and was dependent on

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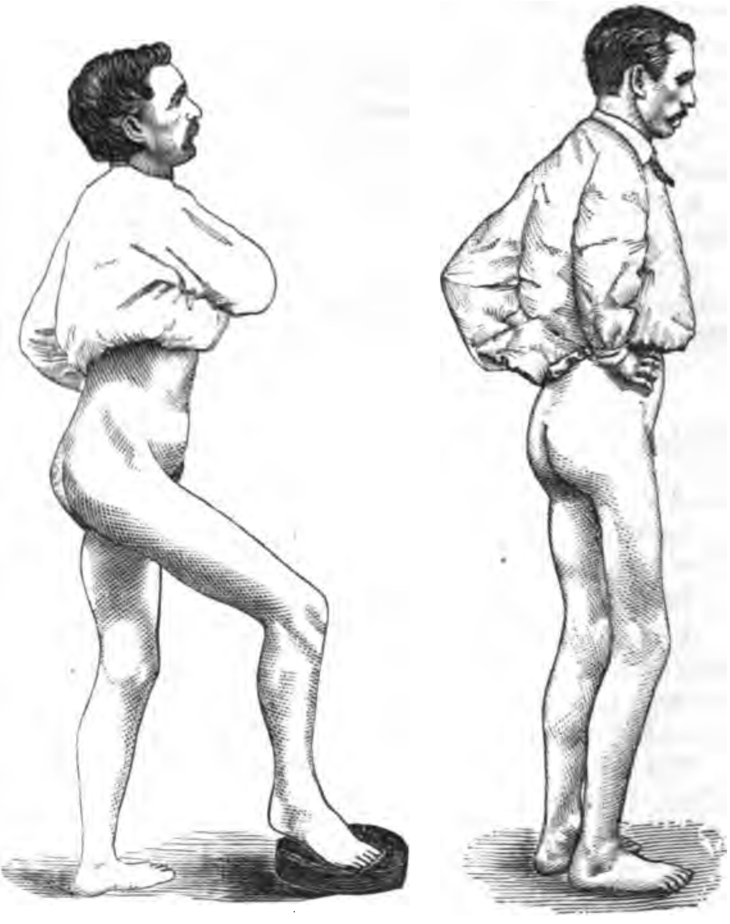
[1] Read before the New York County Medical Society, October 27, 1878.

[2] "A New Operation for Bony Anchylosis of the Hip-Joint," etc., by William Adams, F. R. C. S. London, 1871.



the use of crutches in locomotion. My friend Prof. Detmold, who sent the case to me for treatment, suspected that the anchylosis was fibrous; and such was my own impression, until I made an examination while the patient was under the influence of ether, when it became evident that the rigidity was due to true anchylosis, as no amount of force that I dared to exert caused the slightest movement of the thigh upon the pelvis.

On February 12, 1872, I performed subcutaneous division of the neck of the femur, at the Strangers' Hospital, in the presence of Drs. Parker, Buck, Markoe, Thomas, Peters, and others. The operation was performed in the following manner: A long, straight, narrow bistoury was thrust through the soft parts just above the great trochanter, and carried directly in front of the cervix femoris, so as to separate the soft parts from this aspect of the bone. The knife was then withdrawn, and a narrow saw (such as the one devised by Mr. Adams), an inch and a half in length, and having a long, slender shank, was introduced along the track made by the knife, and the neck of the femur divided. The bone was exceedingly firm, and nearly twenty-five minutes were required to complete the section. Very little blood was lost during the operation; and the external wound, which was hardly three-eighths of an inch in extent, was dressed simply with a piece of lint, a strip of adhesive plaster, and a spica-bandage.

After the bone had been severed, it was found necessary to divide the tendons of the adductor longus and the tensor vaginæ femoris. When this had been done, the thigh was immediately and readily extended to a right line with the body. The patient was put to bed, and the limb kept extended by a weight attached to the foot. No inflammation followed the operation; and, on the tenth day, when the dressings were removed, the wound was found to have healed completely, and without suppuration.

The patient was confined to bed for six weeks, in the hope of obtaining bony anchylosis in the straight position; but, as it was found, at the end of that time, that the parts remained freely movable, he was permitted to get up, and to move about the ward on crutches. Meanwhile, the right limb, which, immediately after the operation, was of equal length with the left one, was found to have shortened a quarter of an inch.

The patient was discharged from the hospital on April 29th, and returned to the city for a day only on August 15th, when the above photograph was taken. At that time he was still obliged to get about on crutches, and showed little power over the false joint, which yet remained quite movable. During the winter of 1872–'73 he was again attacked with rheumatism, and confined to bed for several months. The disease was especially severe in the right knee, which, on his return to the city in February, 1873, was found to be in a state of false anchylosis. He was admitted into the Roosevelt Hospital, where an attempt to flex the knee brought on a sharp attack of synovitis, which lasted until May 1, 1873. Since then, he has been steadily improving in general health, and has acquired the power of locomotion to a useful degree. He can walk without the assistance of a cane, but his gait is then awkward and unsteady, owing, he says, rather to a weakness of the knee than of the hip. With the aid of a cane, however, he walks quite well, and, for distances not exceeding a mile, without fatigue. The affected limb is three-quarters of an inch shorter than its fellow, and the existence of a false joint is plainly demonstrable, as the members of the Society can convince themselves on examining the patient. He sits with ease in the upright position, and, while standing erect, can cause the right foot to move as follows: forward, twenty-two inches; backward, nineteen inches; inward, thirteen inches; and outward, fifteen inches. In making the movement of adduction, he is able to bring the limb across the opposite knee. Rotation, to about its normal extent, can be easily effected by passive motion, but the patient has very little voluntary power in producing this movement. In walking, the foot is naturally everted. To what extent further improvement is possible cannot, of course, at present be determined, yet the patient is steadily gaining, and expresses himself highly pleased with the result already obtained.

Cases of bony anchylosis at the hip-joint have rarely been treated by surgical operation; and, until the ingenious plan of subcutaneous osteotomy was recently devised and executed by Mr. Adams, the operations hitherto performed were of a formidable character, and involved very extensive incisions into the soft parts. The first operation ever undertaken for the relief of bony anchylosis at the hip-joint was performed by Dr. Rhea Barton, of Philadelphia, in 1826. It was begun by a crucial incision, seven inches in length, and five inches in width, laying bare the great trochanter. The soft parts then having been separated from the bone, the latter was divided horizontally through the great trochanter and neck of the femur, above the lesser trochanter. The patient recovered with a useful limb, and the false joint thus established remained movable during six years, after the lapse of which period it became anchylosed in the straight position.

It has been alleged[1] that Dr. Barton's operation was undertaken merely for the purpose of rectifying the malposition of the limb, and not with the view of establishing a false joint; that the section was made through the shaft of the femur, below the lesser trochanter, and that a wedge-shaped piece of bone was removed. All of these statements are erroneous, as may be seen by consulting the original paper of Dr. Barton, already referred to.[2] The operation was performed, as I have described it, and for the expressed purpose of creating an artificial joint. Moreover, the joint thus obtained retained its mobility during a period of not less than six years. Barton's operation has since been performed by Rogers, Textor, Maisonneuve, Ross, and others, always with the result of correcting the deformity, but seldom with that of establishing a false joint for any great length of time.

In 1862, Dr. Sayre operated upon two patients with anchylosis of the hip, by a method which resembled Barton's, but which differed from it in the fact that it involved the excision of a semicircular piece of bone. One patient, after the exfoliation of two pieces of dead bone, recovered with a serviceable false joint, which exhibited free motion six months after the operation, when he left the city and returned to his home. In the case of the second patient, the wound closed at the end of four months, but afterward reopened, and discharged several small fragments of dead bone. The patient died of disease of the lung about six months after the operation, and, at the autopsy, the existence of a false joint was verified.

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[1] "A New Operation for Artificial Hip-Joint," etc. By Lewis A. Sayre, M. D., New York Medical Journal, January, 1869.

[2] *North American Medical and Surgical Journal*, vol. iii., p. 279.

Mr. Adams, in the paper referred to, reports seven cases of the operation devised and first performed by him. Of these, six were successful, the other terminating fatally from pyæmia. This latter case was one of fibrous, while the former were all examples of bony anchylosis. Of the successful cases, two ended in anchylosis at the expiration of two months and five months respectively; in the remaining four, the final result, as regards motion, cannot be definitely stated, as two of them were reported five weeks, one four months, and one eleven months, after the operation.

I think it will be found that, in cases of bony anchylosis of the hip-joint requiring a surgical operation, the simple method recommended by Mr. Adams will supersede all others, on account of its safety, and of the facility with which it can be carried out. The question, whether operations of this character may be expected to result in the formation of an artificial joint, is not, in my judgment, a very important one. If the affected limb can be restored to its normal position, and to nearly its normal length, anchylosis will be found, I think, to afford greater security than the best false joint, and to offer no serious obstacle to locomotion, as the movements at the hip-joint are readily compensated for by rotation of the pelvis. In my own case, I suspect that the patient would walk even better than he does at present, if anchylosis had taken place after the deformity had been removed by operation.

II.—*Excision of Lower Jaw for Osteo-Sarcoma; Recovery.*

By James L. Little, M. D., Surgeon to St. Luke's Hospital.

Hannah D. Tillman, widow, aged sixty-three years. Admitted to St. Luke's Hospital, October 2, 1872. The history of this case is as follows:

A little over five years ago the patient noticed a slight swelling under a decayed molar tooth on the right side of the

PLATE I

Fig 1.

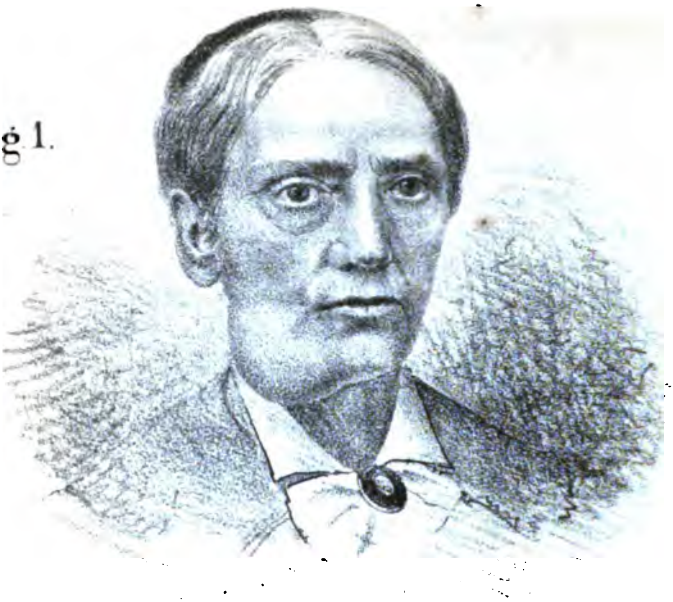
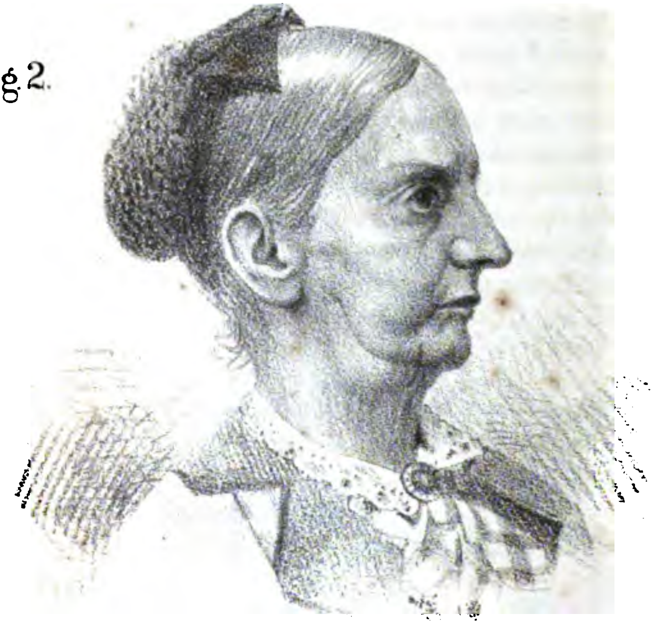


Fig 2.



Geo. C. Wright, lith.

lower jaw. This swelling gave her no pain, and her attention was first called to it by a friend. The decayed tooth was extracted, but the tumor continued to increase in size for about two years, at the end of which time an abscess formed, and discharged through the cavity caused by the removal of the tooth. This somewhat reduced the size of the tumor. The discharge continued for over eight months, and had a very offensive odor. The tumor continued to enlarge slowly for the next three years, when the patient came under my observation. At that time the swelling was about the size of a large walnut, and the surface smooth. The walls seemed to be formed of bony tissue, which yielded under pressure, with a crackling sensation. The tumor was more prominent on the external and inferior surface of the bone. As there was no pain, and the growth gave the patient but little trouble, and was increasing so slowly, I advised against interference at that time. She again called at my office during the latter part of September, 1872, and stated that during the past five months the tumor had increased very rapidly, doubling its size in that time. I advised an operation, and the patient entered St. Luke's Hospital for that purpose. On admission, the tumor was found to be about the size of a hen's-egg, extending externally, from within half an inch of the symphysis, to within a quarter of an inch of the angle of the jaw. The greater prominence of the tumor was on the external and inferior surface of the bone (Plate I., Fig. 1). In some parts distinct fluctuation could be felt, and in others a thin, bony wall, creaking under pressure, could be distinguished. There were two openings in the mucous membrane on the buccal surface of the tumor, through which small portions of the growth protruded. The patient stated that she had no pain, and experienced but little inconvenience. Her general condition was good. A consultation of the surgeons of the hospital was held, and the patient was advised to submit to an operation.

8*th.*—*Operation.*—Patient etherized. A strong silk ligature was passed through the tip of the tongue so as to enable an assistant to keep it drawn forward during the operation, and to prevent it from obstructing respiration. An incision was then made, commencing half an inch above the angle of the jaw, and running parallel with the under surface of the body of the jaw, terminating opposite the symphysis. This incision passed over the most prominent part of the tumor. The tissues were then carefully divided until the surface of the tumor was reached, and the lower jaw was exposed to a point corresponding with the first incisor tooth. This was extracted, and the bone was then at this point denuded of its soft parts around its entire circumference. A chain-saw was then passed around, and the bone divided. The tumor was then enucleated, and the attachment of muscles, and the periosteum, were then detached with a blunt periosteal knife up to the articulation of the jaw. The attachment of the tendon of the temporal muscle to the coronoid process was cut through with a pair of blunt-pointed scissors. The bone was then easily removed from its articulation by a twisting motion, without the use of a knife. The buccal cavity was not opened except at the points where openings previously existed, these two being torn into one. There was but little hæmorrhage. The facial artery was divided during the first part of the operation, and the cut ends secured by ligatures. The opening through the mucous membrane of the mouth was first closed by sutures, and the external wound was also closed by interrupted silk sutures, and a compress and bandage applied.

Plate II., Fig. 2, shows the tumor with removed portion of lower jaw, drawn from the specimen, and afterward lithographed by Mr. Geo. C. Wright, anatomical artist, of this city.

The following notes, of the after-treatment and condition of the patient are taken from the records of the hospital, kept by Dr. Hitchcock:

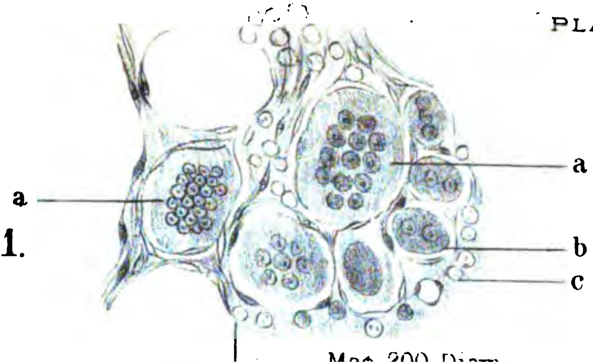
9 P. M.—Patient has rallied well from the ether, and at no time has she shown any great amount of depression, and, with the exception of a slight amount of oozing of blood, all is going on well.

10 P. M.—Oozing of blood has nearly ceased. Patient sleeping soundly.

9th.—Slight swelling and soreness about wound.

10th.—Dressings removed and a clean compress and bandage applied, as before; slight fever: ordered ℞. Tinc. aconiti gtt. ij q. 2 h.

Fig. 1.



Mag. 200 Diam.

Fig. 2.

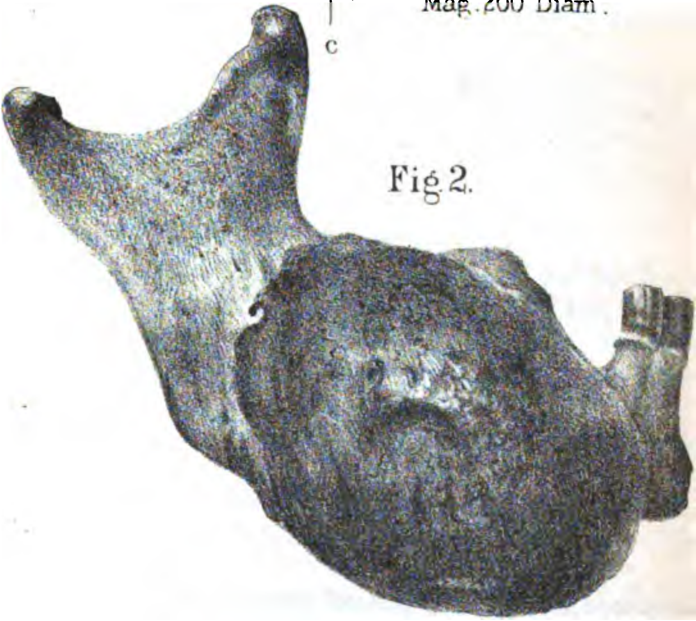
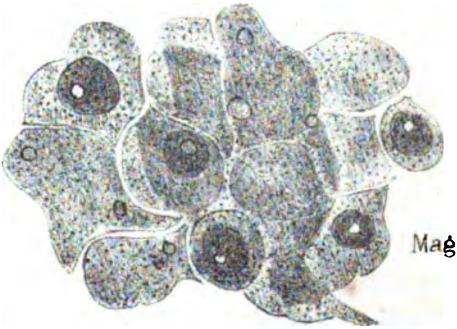


Fig. 3.



Mag. 430 Diam.

Geo.C.Wr

DR. LITTLE, ON EXCISION OF LOWER JAW.

11*th.*—One of the sutures removed at the most dependent part of the wound, and a probe introduced to permit some purulent fluid to escape. Ordered flaxseed-poultice, as there is considerable redness about the wound.

12*th.*—Remaining sutures removed; poultice and aconite continued.

13*th.*—Stopped aconite. Wound opened for nearly its whole length, but all bad symptoms disappeared.

21*st.*—Wound healing nicely. Patient had a chill this afternoon.

22*d.*—Had severe sweating last night. Temperature high. (The record of the temperature and pulse, taken during this period of the case, has been mislaid.) Patient has been living in a malarial district, but gives no history of chills and fever. Wound doing well.

27*th.*—Another chill yesterday.

30*th.*—Patient has been doing better for the past few days. Appetite improved. Takes quinia and stimulants.

November 2*d.*—Fever continues. Wound looks well.

3*d.*—Another chill this morning. Fever about the same. Patient complains of pain in region of liver.

6*th.*—Has had another slight chill. Fever continues. Wound is healing.

9*th.*—Patient has slight diarrhœa.

14*th.*—General condition of patient improving. Wound nearly healed.

27*th.*—Wound nearly healed, with scarcely noticeable deformity. Patient, however, is still very feeble, but, being anxious to go home, is discharged *cured.*

June 5, 1873 (eight months after operation).—Patient called at my office this morning and informed me that, after she reached home, she remained in a feeble condition, with more or less fever, for about two months, when an abscess formed over the region of the liver, and discharged. From that time she has rapidly improved.

The wound upon the face has entirely healed, and the deformity is so slight that in a full view it is not noticeable. A side view of the face shows a marked depression, but the cicatrix is hidden, being drawn up under the chin (Plate I., Fig. 2). In speaking there is a drawing of the remaining portion of the jaw to the left side, but articulation is not interfered with to any extent.

The following report of the microscopical examination of the tumor, with the accompanying microscopic drawings, was made by Dr. Thomas E. Satterthwaite, pathologist to St. Luke's Hospital:

The tumor is found to involve the body of the right maxilla, extending from about one-quarter of an inch in front of the angle of the jaw to within three-quarters of an inch of the symphysis. It measures three inches in length, two inches in vertical thickness, and six inches in circumference. The surface is smooth, and has no nodular projections. The outer wall is formed by several thin laminæ of bone, which are connected together by small transverse bridges. When pressed upon by the finger, they give slight crepitation. The intervening spaces are filled with a soft, semi-solid substance of a pinkish color, which, on the buccal side, pierces the mucous membrane in two places. The substance proper, at about the centre of the tumor, is a firm bony nodule from which arches of bone radiate toward the periphery, terminating in the bony outer wall already described. These arches form larger and smaller crypts, inclosing the soft tissue. A fibrous investment, resembling periosteum, covers the bone. It is remarkable in being easily separated by the forceps. The tissue proper of the tumor is found to consist: 1. Of a framework of fibres radiating from the centre toward the circumference in lines parallel to the transverse bridges of bone; and 2. Of cells of various kinds embedded in a delicate basis substance. These fibres are found to be fibrillated connective tissue of a peculiarly swollen and glistening character; they are interspersed throughout with lymphoid cells. The cells proper of the tumor are not equally abundant everywhere, but are more numerous near the bony arches of the interior. On the other hand, the fibrous tissue is best marked near the periphery. The abundance of the cells gives a peculiar friability to the tumor. The cells are mostly very large and rounded, and a few are somewhat club-shaped. Many of them appear to have no nuclei; but both nuclei and nucleoli are discovered by using suitable reagents. They are separated by a scanty, intercellular substance. In their vicinity are also large masses of protoplasm containing in most cases from six to twenty nuclei. These are the so-called myeloplaxes (Fig. 1, *a a*), the largest of which measured about one four-hundredth of an inch in their smallest diameter. In some places there are also smaller masses of protoplasm, containing from two to three nuclei (*b b*). They fill the meshes of a connective-tissue net-work in which lymphoid cells (*c c*) are abundant. Approaching the surface of the tumor, we find that the lymphoid cells increase in number, while the large rounded cells are less frequent. As the tissue becomes denser at the extreme periphery, the vessels become numerous, and bone corpuscles appear. These anatomical elements are such as belong to sarcomatous and bony tissue, and justify us in regarding the tumor as an osteosarcoma. The prognosis is favorable.

Fig. 1 is somewhat diagrammatic.

Fig. 2 is a pretty accurate representation of two layers of the large round cells, one superimposed on the other.

III.—*Recovery from Bite of a Rattlesnake.* By W. F. C. BEATTIE, M. D., Cornwall, N. Y.

AT 7 A. M., June 28th, Joseph Hulse, aged fifty-two years (living a hermit's life in the mountains), seized a live rattlesnake by the neck with the naked hand. The snake, having play enough of head, inserted his fangs at the second joint of the right index-finger. At 10 o'clock A. M., after walking three miles in the hot sun, Hulse presented himself, pale, trembling, and cadaverous, reeling, when attempting to walk, like a drunken man, and frequently falling as though dead, but immediately recovering muscular power when in a prone position, and then able again to rise. I assisted him to a neighboring barn, and placed him on a bed of straw. His pulse was 160, with frequent intermissions. His hand and arm were fearfully swollen, and there was ecchymosis of the arm and the anterior part of the chest. The mind was somewhat incoherent. Fearful as seemed the train of symptoms, I immediately laid open the wounded finger through an inch of gangrenous flesh at the seat of injury. He then swallowed half a pint of Bourbon whiskey, and repeated the dose every five minutes until he had taken one quart. The first effect was to reduce the pulse to 100 per minute, and tranquillize the mind. Then profound inebriation ensued. The arm was laid in a large poultice of mud, the first effect being to cause loud complaints of pain at the seat of injury, although there had been no sensation on using the lance. After four hours of stupor the patient awoke, when an empiric, in my absence, cleansed his arm and very tightly bandaged fingers and arm above the elbow. In this condition he was conveyed to the poor-master. Word was left that I need not see him until morning, when I found, to my horror, that the circulation was so completely cut off, that, on removing the bandage, incipient gangrene of the sore finger had occurred. Vitality, however, was restored and the finger got well after a sloughing process. I now ordered milk, with the addition of a teaspoonful of whiskey, the whiskey to be increased to a tablespoonful when the stomach would bear it, and to be taken *ad libitum*. I then ordered sesquicarbonate of ammonia, grs. x, every two hours, and administered three compound cathartic pills. In the afternoon an officious friend applied a white-ash bark ligature at the middle of the arm so tightly that serum exuded, which a by-stander warned me not to interfere with, as it was the "poison coming out." There was now obstinate hæmorrhage from the gums and from the wound in the finger, which was checked by perchloride of iron, and an elevated position of the arm. The blood had lost its property of coagulating, and lay for hours, in the hot sun, fluid as turpentine. This seemed proof positive that the poison had permeated the system. After a few days of the above treatment, I ordered tonics, and four weeks later the man was at work. I think we may learn from this case that a rattlesnake-bite, although the poison has impregnated the system, is not necessarily fatal.

IV.—*A Case of Syphilitic Laryngitis, with Ulceration of the Lingual Sinuses and Fibrinous Adhesions of the Ventricular Bands to the Vocal Cords.* By Edward C. Mann, M. D., Physician and Surgeon-in-Chief to the Brooklyn Dispensary for Diseases of the Throat and Lungs.

Mr. McC., forty-one years of age, laborer, applied for treatment in May, 1873. Reported having had a chancre sixteen years before, while following the occupation of a sailor, which was followed by secondary syphilis. Has suffered for some months past from an irritable and painful condition of the larynx, together with a weak, shrill, and husky voice, with persistent cough, and at times painful dysphagia. Appetite very poor and health much undermined by the disease. Laryngoscopic examination revealed extensive ulceration of the lingual sinuses, on either side of the glosso-epiglottic fold or fræ-num of the epiglottis, which stretches from the lingual face of epiglottis to the base of the tongue. These ulcerations were quite deep, with sharply-cut edges, and were covered with a grayish deposit. The epiglottis was much thickened and inflamed, rendering the act of swallowing at times very painful. The mucous membrane covering the entire larynx was seen to be of a deep coppery-red color, this redness being the deepest over the ary-epiglottic fold, and the arytenoid cartilages, which latter were somewhat œdematous from the submucous infiltration of the mucous membrane covering them. The vocal cords were but slightly congested, and appeared whiter than usual by the contrast afforded by the general congestion in the larynx. There was quite a collection of mucus observed in the inter-arytenoidal fold, which was readily detached by the introduction of the sponge. The syphilitic laryngitis had evidently led to the deposition of fibrine, as there were adhesions extending from the ventricular bands to the vocal cords below, which, although small, interfered materially with the proper vibration of the cords during phonation. As the patient's health was much impaired, he was put upon a mixture of iron and quinine, to build up his system, together with the internal administration of iodide of potassium, and the bichloride of mercury. Applications were made locally to the ulcerated lingual sinuses, of a solution of nitrate of silver, two drachms to the ounce of water, and to the inflamed and thickened epiglottis and the larynx was applied a solution of nitrate of silver, sixty grains to the ounce, which latter application at once relieved the difficulty of swallowing. The adhesions existing between the ventricular bands and vocal cords were divided with Tobold's concealed knife, and the cut edges touched with the nitrate of silver. Although the patient's general health improved very much under the tonic and specific treatment, the ulcerations in the lingual sinuses did not yield at all to the local treatment by nitrate of silver, and accordingly the acid nitrate of mercury was substituted, the applications being made in the strength of one part of the acid nitrate to six parts of water. These applications proved much more efficacious than the former, and at the present time the ulcerations are nearly all cicatrized. Inhalations of tannin and glycerine, with tincture of opium, were also used, and seemed to relieve the irritating cough very much, and, in many instances of congestion associated with troublesome cough, similar inhalations, in the form of neutralized solutions, have rendered great service in diseases of the throat. The patient's voice is at the present time very much improved, his appetite regained, and the chronic laryngitis has yielded to the combined tonic and specific treatment with the use of mineral astringents locally, in the form of spray. It is proper to add that the most rapid improvement seemed to take place after the patient's general health had been restored by the use of tonics, the local treatment then having much more influence on the mucous membrane of the throat than before, when the patient was in an anæmic condition.

V.—*Singular Spontaneous Dislocation of the Clavicles.* By EDGAR HOLDEN, M. D., Newark, N. J.

A YOUNG gentleman, aged about twenty-three years, came under my observation September 1, 1873, for a troublesome dislocation of the sternal end of both clavicles upon slight exertion, which, from the time when first observed, three weeks before, had gradually become more and more frequent until even putting the hands to the face sufficed to accomplish the result. Of course, such a condition rendered the patient almost helpless, and, aside from the slight pain experienced, he had become mentally somewhat distressed.

The history, in brief, was as follows: About six months prior to the date given above, one clavicle was dislocated by violent exertion in a gymnasium. This was readily reduced and so remained, the general health being unimpaired. The patient has always been thin and not robust, but rarely, however, even temporarily ill. In August a slipping of something in the ankle-joint upon going up-stairs began to give uneasiness. This was probably due to a relaxation of the ligaments at the lower end of the fibula. Then occurred again the disarticulation of the clavicle formerly loosened, but now caused by the slight exertion of putting on the coat. In a few days both clavicles suddenly slipped under similar circumstances, and from that time this phenomenon reoccurred frequently until, as stated, the inconvenience had become unbearable.

The disarticulation was upward and forward, and so great as to equal the diameter of the articulating extremity of the bone. These were, however, easily reduced, and at first a slight pressure was sufficient to keep them in place. Compress and strapping were resorted to in a variety of ways, but, owing to the anatomical relation of the muscles of the vicinity, without success. It is to call attention to the device which did relieve, that, if so rare a case should occur to any other member of the profession, it may at once be resorted to, that this article is written.

An artificial sternum of sole-leather was made of the size and shape of the natural one, except that its cornua were prolonged to the extent of about two inches; in other words, the inter-clavicular notch was deepened to that extent. These cornua were pulled apart to allow free motion of the sterno-cleido-mastoid muscles when the head was turned, and the new sternum was moulded while wet to the inequalities of the natural one, the cornua being bent over the ends of the clavicle. When dry this was covered with buckskin, with strap and buckles at the cornua and lower extremity, and a broad belt made to encircle the waist below the ribs. To this belt the straps mentioned were buckled.

Counter-extension was thus secured, and the result has been highly satisfactory—the instrument proving in no great degree uncomfortable, and, after the many discouraging trials with other means, succeeding admirably in preventing any dislocation even upon unusual exertion.

VI.—*Apoplectic Epileptiform Convulsions, with Right Hæmorrhagic Infarction and Slight Left Hemiplegia, followed by Articular Rheumatism, Endocarditis, and Death by Thrombosis of the Heart.* By J. THEUS TAYLOR, M. D.

MR. P. R., of New York, aged fifty-five years, by profession a merchant, the father of a large family, and in the enjoyment for the most part of robust health (although he had had three attacks of articular rheumatism, which had left their wonted impression on the mitral valves, and moreover had experienced, unconsciously, two moments of faintness within three years, to which much attention was not paid at the time, nor was he informed of them; yet memory was observed to be rather at fault afterward, and they were doubtless of epileptiform character, and in all respects similar to *le petit mal*, so graphically portrayed by Trousseau), had for many years led a very active and busy life, riding daily fifty-eight miles in railroad-cars and six in his carriage, in addition to car and omnibus jostling in the city; and being constantly engaged in his store from 9½ A. M. to 4½ P. M., almost every day, year in and out. But few organizations could have withstood this long-continued nerve-tension (about thirty years). So the worthy gentleman at last reached the culminating point at 3 A. M., Friday, November 29, 1872, and went into violent convulsions, during which the tongue was badly bitten. He had been seemingly in unusual health and spirits during the day, and drove out to the park with his wife, and shaved himself before retiring at 11 P. M. He had, however, been somewhat excited and fatigued in the morning while attempting to prevent a stronger person from robbing a weaker of his marketing; and had subsequently gone to the police court to appear in evidence against the culprit.

I was hastily summoned, and, finding him unconscious, talking incoherently, very restless, with injected eyes and face, and pulse throbbing, frequent, and full, bled him from the left median basilic (forgetful of the rule of the excellent old Morgagni in such cases) *ad deliquium*, while seated in an easy-chair with his feet and legs immersed in a hot mustard-bath, and the head enveloped in iced towels. The blood was very dark, and did not change to a lighter hue until about ℥xxiv had been abstracted, when he was put to bed, and soon regained perfect consciousness and intelligence. Flying sinapisms were kept to the legs, bottles of hot water to the feet, and an India-rubber bag of ice to the head during the night, and ℥ij of ammoniated tincture of valerian, with grs. xxx of bromide potassium, were given as I retired, and a bottle of Hathorne-water at 8 A. M., which acted copiously.

November 29*th*, 11 A. M.—Had passed a quiet morning and slept some hours, making no special complaint. I discovered left hemiplegia (by hair-pin and touch) to a moderate degree, affecting both the nerves of sensation and motion; and the right side of the head along the parietal bone was noticed to be tender to the touch, as usually happens in such cases at the seat of injury; and there was a very marked difference in the reflex action of the two sides when the soles of the feet were tickled *à la* Marshall Hall. Of course, with all these symptoms, the most natural diagnosis to be made was right hæmorrhagic infarction into the brain. The pulse being frequent, 110, temperature, 98⅗°, I ordered tincture digitalis gtt. xx every two hours, with perfect quietude and low diet.

30*th*, 11 A. M.—Pulse 90; thermometer 98⅗°; the face, however, is somewhat flushed, and he complains of throbbing in the right side of the head. I therefore, in order to guard against the coming reaction, ordered:

℞.	Calomelanos,	grs. xviij.
	Ext. hyoscyami,	vj.
	Podophyl. resinæ,	iv, in sol.

Ut ft. capsulæ xij. S. One every six hours, and digitalis continued.

December 1*st.*—Condition unchanged, and treatment continued.

2*d*, 11 A. M.—Pulse 110; temperature $100\frac{3}{5}$°; and more pain and throbbing in the right side of head. ℞. Spirits Mindereri, combined with tinct. digitalis, tinct acconit. rad., aquæ lauro-cerasi, and nitric ether, every three hours, and one calomel-capsule every twelve hours, as the gums are somewhat puffed, showing slight mercurial impression.

3*d*, 11 A. M.—Temperature $98\frac{3}{5}$°; pulse softer, but too frequent, 105 while sitting up and dressed. Treatment continued, and calomel-capsules (ten of which had been taken) suspended. Had been up all day, and well purged by Hathorne-water taken at daylight. Here it should be mentioned that, from the inception of the attack, the primæ viæ had been properly regulated by lavements or otherwise, in order to divert from the brain, three or four times a day.

4*th.*—Progressing favorably, though annoyed by inconsiderate visitors. Treatment continued, and a little old Bourbon allowed with beef-tea.

5*th.*—No change. Left vision and sensibility decidedly less than right.

6*th.*—Continued improvement. Made an ophthalmoscopic examination, and could detect no appreciable difference between the two eyes; the pupil of the left is, however, somewhat dilated, though not permanently so. Discharged the patient, with a caution as to the absolute necessity of quietude and carefulness for some time to come. He went to his store and transacted business next day (7th), although his gait was shuffling and sidling, and the left limb a little dragged as he walked; and shortly after his return home was seized with articular rheumatism of the right hand and wrist, and passed a very bad and sleepless night.

8*th*, 9 A. M.—I was sent for, and found him suffering so much that $\frac{1}{40}$ atropiæ with gtt. xv. Magendie were at once given hypodermically, which gave prompt relief, and he soon fell asleep. As before stated, he had had other rheumatic attacks, and no doubt some endocarditis, from which he lost a daughter a year or two since. He was therefore ordered to keep his bed, lying between blankets, so as to guard against rheumatism

I directed the hand and joints to be rubbed twice a day with warm chloroform, camphor, and ammonia liniment, and to be well protected by cotton-batting, oiled-silk, and a flannel bag extending to the shoulder, and prescribed the following mixture:

℞. Tinct. colchic. sem. et fol.,	ʒ iij.
Spt. ether. nitric.,	ʒ iv.
Potass. bicarb.,	ʒ iv.
Aquæ carbonic. ad.	O ft. sol.

Shake well, and give ℥j every six hours in a claret-glass of warm Virginia snake-root tea. Diet, beef-tea, milk-punch, old Bourbon, to which he was accustomed, from time to time. The case progressed favorably, so that by December 11th the affected joint was free from pain; but the patient would get out of bed, and thus took a relapse, which on the 12th settled in the right elbow-joint, and was very painful along the ulnar nerve. I increased the wine of colchicum to thirty drops four times a day, and added lith. carb., grs. xl, to the mixture, and ordered pulv. Doveri, grs. v, in capsule every six hours, to allay pain and promote perspiration. The limb to be well protected, dressed as the wrist had been, and the greatest care observed.

14*th*.—Progressing favorably; treatment continued.

15*th*.—Urine alkaline, and joint much less painful. Reduced the mixture by one-half at same intervals, and allowed a quail and soft-boiled eggs, in addition to previous diet, etc.

16*th*.—Discontinued the alkaline mixture, and changed the dose of tinct. digitalis to gtt. xx every eight hours instead gtt. xxx every twelve hours (as has been given for several days to keep down the action of the heart); and ordered: ℞. Ferri et quiniæ citrat. ʒj, strychniæ sulph. gt. j, tinct. gentianæ co. ʒxviij, ft. sol. S. One teaspoonful in cock-tail with brandy or whiskey every eight hours. This was given to tone up the system and strengthen the stomach, somewhat disturbed by the colchicum and alkalies.

17*th*.—Makes no complaint of the joints, but says he has no appetite and feels weak. The pulse is rather feeble at 110 (its usual range for several days past, although sometimes nearly down to 100), and is without irregularity; no endo- or exocardial murmurs can be detected by the most careful examination with the ear or stethoscope. I ordered beef-tea, three quarts in twenty-four hours, cream-punches of best cognac as often as desired, and brandy to be given freely. Perfect rest enjoined; digitalis suspended, and the gentian mixture continued.

17*th*, 9 P. M.—Pulse more frequent, ranging from 110 to 115, and decubitus semi-erect (propped up by pillows), significant of pericardial or pleural trouble, although the respiration was only 26, and there was not the flatness of effusion. He had been annoyed by frequent visitors, and seemed much exhausted. ℞. Increase stimulants, and keep him in bed well blanketed.

18*th*, 11 A. M.—Heart-action irregular and intermitting, with a decided bellows murmur at the mitral, and projected up to the aortal valves. Pulse 110 to 115. Gave at once gtts. xxx of tincture digitalis in a glass of brandy, and applied a large sinapism to precordia and chest; and at 3½ P. M. substituted for it a blister eight by four inches. Ordered stimulants, milk-punch and beef-tea, to be given freely, and no company admitted. Beyond the shadow of a doubt, he has endocarditis, which I have been so constantly endeavoring to guard against for days past, and the danger is imminent, on account of the deeply-fixed arthritic diathesis, and the previously existing condition of the mitral valve and left auriculo-ventricular conduit, at which a rough murmur existed before the present rheumatic attack, resulting from a previous endocarditis. His extremely critical condition, owing to the heart involvement, was yesterday announced to his wife, and she was, moreover, informed of the fact that the apoplectic attack might terminate, sooner or later, in softening of the brain. In this consultation I learned from her that Mr. R. had had two attacks of *petit mal* in the last three years, and was subject to fits when a boy; and that two of the children of the same bed had been similarly affected.

The temperature has for several days been almost normal, and the inflamed parts have given but little annoyance, and left sensibility has somewhat improved, but locomotion not at all.

18*th*, 9 P. M.—The blister has drawn well, and acted admirably on the heart, whose movement is smooth, and free from intermission and bellows-murmur. Pulse 110, respiration 24, temperature 98⅖°, and decubitus natural and easy. Treatment continued, and blister dressed with flax-seed cataplasm, applied hot, and kept warm by oiled silk and flannel bandage.

It should be noticed, *en passant*, that two recrudescences of the rheumatic attack had been produced by the patient's getting out of bed and exposing himself to the cold air. In the first, the right elbow was seized on December 12th; and in the second, endocarditis, under which he now labors, took place.

19*th*, 11 A. M.—Pulse 110, regular and smooth, and without the least intermission, temperature 98⅖°, respiration 24. Urine of normal acid reaction, and clear amber color. Specific gravity 1015, with some epithelium and tube casts. No albumen, and chlorides normal. He looks brighter and stronger; no endo- or exocardial murmurs are to be heard. He has taken three quarts of beef-tea, and about a pint and a half of old cognac, and a pitcher of cream, in twenty-four hours. Treatment continued, and blister to be dressed twice a day. The bowels were moved to-day.

19*th*, 3.40 P. M.—Pulse 110, and patient, in all respects, as at morning visit. ℞. Tincture digitalis gtt. xxv (which had been suspended for some hours, owing to his prostrated condition).

I offered a consultation if they desired it (as I was a stranger to the family), and they chose their family physician, Dr. Foster, and we met at 8 P. M. The doctor concurred fully in all that had been, and was being, done; and we agreed entirely as to the nature of the attack. Dr. Foster advised the addition of quinine grs. vj daily, and we finally agreed on grs. x, in addition to the gentian mixture, and tincture digitalis gtt. xxv every eight hours, and diet and stimulants as before; and I also advised strong, pure coffee, from time to time, to aid in steadying the heart's action.

20*th*, 11 A. M.—Consultation. Pulse 106, temperature 98°, respiration 28; decubitus normal, heart-action without interruption, and no endocardial murmurs; urine, specific gravity 1022. Treatment continued, and tincture digitalis increased by five drops at each dose, making thirty drops every eight hours.

20*th*, 9 P. M.—Seems very much better, makes no complaint, is nourished well, and is in excellent spirits. Pulse 100, for the first time in many days, and quite smooth and regular; he has some pain and heat in the right hand, where the rheumatism first appeared. I saw him again at 2 A. M., and found his condition unchanged.

21*st*, 11 A. M.—Consultation. Pulse 100, temperature 98°, respiration 28. Urine, specific gravity 1020, and of same character as at last examination. He had passed a good night, though somewhat disturbed by the cries of a lady with hysteria to whom I had been called; and was nourished well on beef-tea, milk-punch, etc. The heart-action was not so good as last night, but without endo- or exocardial murmurs, yet it hesitated, and intermitted at intervals, although a half minute or more would pass without any irregularity being observed. We therefore ordered the stimulants, which had been somewhat neglected during the night, to be increased, and added champagne to the previous allowance, and decided to suspend all medicines until further observation. The last eight hours' portion of gentian-mixture ʒj, quinine grs. 3⅛, and tincture digitalis gtt. xxx, had been administered at 6 A. M., and the next would have been at 2 P. M.

While Dr. Foster and I were engaged in conversation, in an adjacent room, the patient became alarmed at our long conference, and grew faint, and we were hastily called by his wife to his assistance. But we reassured him, and, after a strong drink of whiskey, he became more composed, yet still urged us to spare no expense in calling in additional counsel if we thought it necessary. His moral emotions had acted very unfavorably upon the heart, rendering its action, for the time, very irregular and unsteady. We remained with the patient until he grew calmer, then retired to my office, a few doors off, for further conference, and to make a careful examination of the urine. We then agreed to meet in consultation at 8 P. M., I intending, in the interim, to visit him frequently, as the hyposthenia and intermitting pulse gave a very grave aspect to the case. Dr. Foster had only left me for a few minutes when I was hurriedly summoned, and found that death had suddenly taken place at 11.55 A. M., from thrombosis of the heart.

The slight and momentary faintness, which had been experienced by the gentleman a half-hour before, was the initial symptom of the formation of the concretion that so soon terminated his career. All observers of heart-disease, since Morgagni, make mention of this inexorably fatal complication; and the work of the celebrated Bouillaud abounds with such examples, resulting from rheumatic endocarditis, of which (he says) " the only possible cure would be to open the heart, and take out the clot by a surgical operation."

Remarks.—In conclusion, it is well worthy of mention, as a therapeutic fact, that it was found quite impossible, in this case, to control the circulation, to any decided extent, by digitalis, or although the tincture was given in varying quantities, sixty, seventy-five, or ninety drops in twenty-four hours, yet the pulse was never reduced to less than 100 beats to the minute, during the whole course of the rheumatic attack.

I should state, moreover, that, owing to the frequent uncertainty and unreliableness of this drug, I prescribed a tincture of Koechling Bros., the same that I had been in the habit of using for a year past to my entire satisfaction, and which I am now giving to several patients with decided effect.

It was, as narrated, persisted in, for the most part, during the entire illness—in the first instance, to diminish the force of cerebral circulation after the convulsive seizure, and, in the second place, to keep up that impression, modify the rheumatic fever, promote urinary secretion, and steady the heart's action.

In the general management of the case, the treatment, as described, had promptly relieved—1. The cerebral trouble, which resulted from the convulsive seizure of November 29, 1872, so that the patient was discharged on December 6, 1873; 2. The articular rheumatism which appeared in the right hand and wrist on the night of the seventh, and in the elbow-joint on the 12th, so that by the 16th the attack was subdued; 3. The endocarditis, the first symptoms of which were observed on the night of the 17th, and which, judging from all the well-known signs, was entirely controlled on the 18th, as there were no bellows-murmur, no intermittence of pulse on the 19th and 20th, and the patient was in a fair way of recovery up to 11 A. M. of the 21st, when the pulse became somewhat irregular and unsteady, and at 11.30, as related, a slight hyposthenia took place, being the first symptom of heart-clot, from which he rallied in a few moments; but a second occurred at 11.55, which was instantly fatal. It was, therefore, the intensity of the arthritic diathesis, and the impression produced upon the heart by previous attacks, together with the condition of the blood, which, in such cases, abounds in fibrine, and is peculiarly liable to clot, that baffled our efforts even in the moment of success. It might well be urged by some pathologists that the two attacks of faintness, experienced some time ago by the subject of this memoir, resulted from slight, transitory embolisms, due to the disintegration of certain carnosities fringing the mitral or aortic valves (the products of previous endocardial inflammations), and that the last convulsive seizure might have been caused by a more complete embolic obstruction of an artery in the right brain, as well as by hæmorrhagic infarction. But I think that my theory of the case would have been sustained by *post-mortem* examination (which, I regret, was not demanded), as the biting of the tongue in the grand attack proves the two former to have been epileptic, supported, as they all are, by family history. Yet, of course, it would have fallen to the ground had we found obstructed arteries, and brain-softening, without recent hæmorrhagic infarction. It is a well-established fact, moreover, that, after grand attacks of epilepsia, there is often, as here, more or less hæmiplegia, owing entirely to congestion of great nerve-centres. One may, therefore, be somewhat in doubt as to the specific brain-lesion, though there can be none as to the thrombosis of the heart; but we cannot be positive as to its site. Concretions are, however, mostly formed in the right heart, as venous is more liable to clot than arterial blood, and more likely to occur there, owing to its comparatively feeble action, when contrasted with the enormous power expended by the left in its vehement contractions; and it seems that the arterial torrent would encounter less resistance as propelled by the left ventricle into the aorta, to be distributed through its countless branches to the whole economy, than does the entire venous current flowing by the pulmonary artery into the lungs. Hence, at death, the left cavities, as a rule, are empty, and the right, where that process may be said to commence, more or less full of clotted blood, of more or less recent date, plugging up the pulmonary artery; and this would, of course, effectually arrest all blood-supply to the lungs, and produce instant dissolution, as in this case. But, were the circulation only partially obstructed, as, for instance, by an incipient concretion in the left auricular ventricle, the patient might linger for some hours, passing from one attack of hypothenia to another, and then, by degrees, sinking into coma and death.

Correspondence.

Abstract of a Lecture on Syphilis of the Larnyx, delivered at the London Hospital, July 18, 1873, by Morell Mackenzie, M. D. (London), Physician to the Hospital for Diseases of the Throat, and Assistant-Physician to the London Hospital.

REPORTED BY BEVERLY ROBINSON, M. D.

SYPHILITIC affections of the larnyx are worthy of our earnest consideration, inasmuch as they are so frequently met with. Thus fourteen per cent. of *all* forms of disease which are visible at the Throat Hospital are attributable to syphilitic infection, and at least a third of *all serious* diseases of the larnyx are of like origin.

By syphilis, we wish to designate a specific, constitutional disease caused by inoculation. As in phthisis, we find that men are more liable to this disease than women. Specific secondary phenomena occur more frequently in winter than in summer.

The division between secondary and tertiary syphilis is arbitrary, i. e., sometimes later forms of the disease become apparent at early periods; and, again, a long while after the primary sore, we encounter what are familiarly known as secondary manifestations. Secondary syphilis shows itself under three forms: 1. Congestion. 2. Mucous patches, or condylomata. 3. Ulceration. Secondary phenomena occur frequently in winter, from six weeks to three months after the inoculation of the virus, and this period may sometimes be extended to twelve months.

From statistics published at Tübingen, it has been found that secondary phenomena were remarked in twenty per cent. of all patients suffering from syphilis. Sometimes patients are unwilling to recognize the existence of syphilis in their persons. It is, therefore, most useful, especially in private practice, to be able to diagnosticate surely that a patient is suffering from the effects of syphilis, by the appearance of the throat, without asking indiscreet questions. The symmetry of the march of syphilis in the throat is highly characteristic, and of itself is frequently sufficient to establish a firm conviction with regard to its real nature in the mind of the medical attendant.

This local manifestation may disappear, however, and, if ocular examination has been neglected, the physician and patient alike may ignore that it was ever present. This could never be true of *tertiary* syphilis, for in the latter stage of the disease the morbid phenomena are always lasting and serious. Among the functional symptoms (or those which the patient and medical adviser *both* perceive) of syphilitic laryngitis, we should note specially that the patient is unable, owing to local thickening and lessened calibre in this portion of the air-tube, to sound his voice in a normal manner. In this condition, an insufficient quantity of atmospheric air passes through the larnyx, and greater effort is required for articulation of words than is the case with healthy persons. Hoarseness then becomes a distinctive sign of syphilitic laryngitis. In a like manner the dyspnœa, which constantly and shortly shows itself, is explained. The function of the epiglottis is, as you are aware, to close the upper orifice of the larnyx during the effort of deglutition. Frequently one-half, and especially the right half, of the epiglottis is destroyed by ulceration, and yet swallowing is not materially interfered with. A patient may even lose the whole of the epiglottis, and still be able to swallow (a specimen, bearing witness to this fact, is visible in the Museum of St. Bartholomew's Hospital). These last-mentioned facts have an important bearing on the prognosis to be made with regard to certain patients. In practice, while ulceration is going on, difficulty of swallowing may exist, as it does, in very many cases. It can be confidently affirmed, however, that when the ulceration is healed, the function will be recovered, and deglutition performed without pain or difficulty. Alteration of form is distinctively characteristic of tertiary syphilis of the larynx. In speaking of laryngeal phthisis and of its different varieties, we remarked how slightly oftentimes the outward and inward configuration of the vocal organ is changed. In tertiary syphilis, on the contrary, enormous changes of shape frequently take place. In these cases, too, the constitution is generally weak, and a certain amount of cachexia exists. When we have alteration of voice, dyspnœa, and difficulty of swallowing, it is often obligatory to make a differential diagnosis between cancer, phthisis, and syphilis of the larynx. Apart from the great differences in form, which occasionally exist, of healthy larynges, we must remark that syphilis *always* produces change of form, and in this we find a distinguishing feature of great importance between syphilitic laryngitis and laryngeal phthisis.

In cancer we do not perceive mere alteration of form; displacement is also produced. Again, in laryngeal phthisis we never get ulceration without previous thickening, whereas in syphilis one often finds ulceration without anterior deposit. This is a good help toward a differential diagnosis.

Phthisis and cancer always cause ulceration, but to a limited extent only. In syphilis, ulceration is very extensive. Finally, syphilitic disease often causes great narrowness of the laryngeal opening. It is true that, in simple chronic laryngitis, we likewise get this same narrowness of the larynx, but it exists then without the change of form that occurs in syphilis of the larynx.

In secondary syphilis, great differences in practice are accepted among practitioners. By the majority secondary symptoms are treated with mercury. A few others (and among these Dr. Mackenzie classes himself) do not consider this habit justified by the results. For his own part, Dr. Mackenzie does not believe the administration of salts of mercury ever prevents the appearance of tertiary affections of the throat, and does not, therefore, approve of their use. The solutions of sulphate of copper (generally xv grs.–℥j) and tincture of iodine being properly employed in local applications, we can generally have a cure in two or three months. Of all local remedies, sulphate of copper is the most efficacious. Sometimes, in very stubborn cases, we may have recourse with advantage to the use of a solution of nitrate of silver (ʒj of the salt in each fluidounce of water).

In the space of six months to a year these secondary manifestations will wear themselves out spontaneously, for after all syphilis is but an exanthematous affection, and its eruption is to be likened to the eruption of measles or small-pox.

Regarded in this light, the secondary phenomena do not require a constitutional treatment. Not so tertiary syphilis. This form of the disease demands imperatively to be treated in an energetic manner. Iodide of potassium must be given internally (grs. x three times a day) combined with spirits of ammonia, and dissolved in large quantities of water. The iodide does not, administered in this way, produce irritation of the throat, and the quantity of water taken has a tendency to carry off through the emunctories of the economy the very poison itself of the disease.

Those cases of syphilis which occur in persons suffering from tubercular disease of the lungs are extremely intractable, and the physician can rarely if ever be of any use.

Bibliographical and Literary Notes.

Art. I.—*Sex in Education; or, a Fair Chance for the Girls.* By Edward H. Clarke, M. D. Boston: James R. Osgood & Co., 1873.

This is one of the most judicious, straightforward, and well-considered essays on a medical topic of general interest which have been presented to the public for a long time. The fact is that, in the vast amount of talk and discussion for the last few years on the education of women, it seems to have been generally forgotten, or, rather, never thought of, that the question is to a great extent a medical one, and should be regarded in the light derived from medical knowledge and experience. Dr. Clarke places it distinctly and plainly upon this ground; being led to do so by his experience of the serious and increasing danger to the health of American women, and the disastrous results which are following upon a vicious method of their education. There are few men in the profession in this country who have wider opportunities for knowing the truth in regard to such matters, and equally few who are capable of forming a sounder judgment as to the significance of the facts. The book is written in an easy and piquant style, not without a dash of half-concealed humor here and there; and will prove a most agreeable and entertaining volume for the medical reader, who will seldom fail to give a ready assent to the writer's statements and opinions, while for the general public its serious truths are expressed in such delicate but distinct language that they cannot help exciting the interest which they deserve.

Many of the important points dwelt upon by the author are familiar to every well-informed medical man, though they have seldom been brought to the attention of the public in such logical sequence or presented in such graphic language as in the present volume. The principal idea insisted on is that the present system of education for girls is vicious and unnatural, in the fact that it is made as nearly as possible identical with that for boys; while the physical organization of girls is different from that of boys, and requires, for its successful and healthy development, a different method of education. This is so palpable a truth that it hardly requires a statement for medical readers; and yet there seems to be reason for thinking that a large portion of the public actually do not know it, at least in any practical sense; since many of the theories and schemes for female education, which have recently had a certain degree of popularity, are conceived in either entire ignorance or neglect of so important a fact. The boy, as Dr. Clarke says, grows gradually and steadily from boyhood and youth to maturity and manhood, and the natural law of a boy's education and of a man's life is, in general, that of continuous and sustained exertion; the girl, on the contrary, passes at a certain period, more or less suddenly, from childhood into puberty; and from that time the law of the woman's life is a law of periodicity.

But the principal strain upon the girl's organization, in female schools, seminaries, and colleges, comes just at the period, from the age of fourteen or fifteen years to that of eighteen or twenty, when the catamenial function, the representative and expression of the most important and easily-disturbed physiological endowment of the female organism, is for the first time becoming established. And yet, through this critical period, the girl in the pursuit of her studies is expected to devote herself to geometry and physics, Virgil and Cicero, political economy and the solar system, and be ready to go through with her regular exercises and recitations in these various branches at the daily-recurring hours, without intermission or failure, and without the slightest regard to the fact that Nature at the same time is demanding, once every four weeks, several days of bodily and mental repose for the accomplishment of a most essential and unavoidable function. The results of this palpable disobedience of Nature's requirements are fully given in the third part of Dr. Clarke book, in a series of cases drawn from his own clinical experience.

The whole treatise is written professedly from the standpoint of physiology; and the following paragraph will sufficiently illustrate its main idea: "No organ or function," the author says, "in plant, animal, or human kind, can be properly regarded as a disability or source of weakness. Through ignorance or misdirection it may limit or enfeeble the animal or being that misguides it; but, rightly guided and developed, it is either in itself a source of power and grace to its parent stock, or a necessary stage in the development of larger grace and power. The female organization is no exception to this law. The periodical movements which characterize and influence woman's structure for more than half her terrestrial life, and which, in their ebb and flow, sway every fibre and thrill every nerve of her body a dozen times a year, and the occasional pregnancies which test her maternal resources and cradle the race, are, or are evidently intended to be, fountains of power, not hinderances to her. It is a foolish and criminal delicacy that has persuaded woman to be so ashamed of the temple God built for her as to neglect one of its most important services. . . . Woman, in the interest of the race, is dowered with a set of organs peculiar to herself, whose complexity, delicacy, sympathies, and force, are among the marvels of creation. If properly nurtured and cared for, they are a source of strength and power to her. If neglected and mismanaged, they retaliate upon their possessor with weakness and disease, as well of the mind as of the body."

We cordially recommend this book as one of those rare productions on a medical topic which treat the subject in a thoroughly professional manner, and are at the same time really calculated to interest and instruct the general reader.

J. C. D.

ART. II.—*Proceedings of the Twentieth Annual Meeting of the Medical Society of the State of North Carolina, held at Statesville, May*, 1873.

THIS pamphlet of 81 pages is made up, like most others of its class, of a short account of routine proceedings, followed by addresses and essays, and, also like them, is not, we regret to say, altogether edifying. The Society is made up, apparently, of delegates—one from each county, which fact ought to place it above the level of those societies whose meetings consist of any and all of their permanent members who may choose to be present. For this reason we feel that the published proceedings should be reviewed with less than the usual leniency.

Passing over the mere business of the meeting, with only an allusion to the serio-comic report of the Executive Committee, recommending the creation of the inevitable Board of Censors, and the stilted support given thereto by a special committee appointed for the purpose (both committees, by-the way, as is too commonly the case, presided over by one and the same chairman), we come to the continuation of a discussion which has already brought this Society some notoriety.

We refer to the discussion of the *modern treatment of acute internal inflammation*, that is to say, the relegation of blood-letting and starvation to deserved oblivion. As before, the principal disputants are Dr. S. S. Satchwell and Dr. W. A. B. Norcom. The former of these gentlemen, if the reporter has done him justice, has shrouded his assertions in a perfect maze of foggy phraseology, through which, however, is to be discerned his sturdy fealty to the old doctrine of increased vital power in the phlegmasiæ, which doctrine he supports in very much the style of the Kentucky judge, who *decided* that sprinkling was valid baptism. This doctrine he dubs the "natural pathology," and rests it on "millions of the best authorities in all ages and countries" (when shall we hear the last of this stumbling-block in the path of progress, called *authority?*). The criticisms of the *Richmond and Louisville Medical Journal* and the *Practitioner*, on his previous treatment of the question, are termed "assaults," and the editors of those journals, together with "Todd, Bennett & Co.," are rebuked "with much severity;" and yet, it is apparent that Dr. Satchwell is not averse to taking refuge under the "change-of-type" theory, although still apprehensive that "sthenic or dynamic waves may roll in upon us" at any moment; in which event, perchance, one of the national arsenals might have to be called upon to sharpen up the old rusty lancets which must still lie hidden in odd corners throughout the land.

Seriously, if it be possible that Dr. Satchwell expresses the views of any considerable portion of the profession in North Carolina, it is a matter for hearty congratulation that the Society includes at least one man who does not allow any mawkish deference to antiquity to prevent his stripping off the wig which covers the bare poll of "natural pathology"—to point his fellows to the well-ascertained facts that the heart, in acute inflammations, acts with "*increased frequency, to make up for diminished power;*" that digitalis and veratrum viride, in diminishing the frequency of the pulse, can by no possibility do so in any other way than by increasing the power of the heart's action, as shown, at least in the case of digitalis, by the experiments of Fothergill, who observed that, in frogs, poisonous doses of digitalis contracted the heart to a mere white speck, its very tissue exsanguinated by the vigor of its contraction; whereas aconite, a true cardiac sedative, produced death by the very opposite effect of enfeebling the heart's action to the degree of actual paralysis. All these facts, which prove to a demonstration the falsity of the old notion of increased power of the heart's action in inflammation, and the blunder of interpreting commotion as force, Dr. Norcom placed before his fellows in a few brief and pithy sentences, which may fairly be said to be the salt of the published proceedings.

Following the addresses, not particularly remarkable, except that in one of them the Deity is, in unconscious imitation of Artemus Ward, called "the Almighty Anæstheticist," we come to a paper on "Retroversion," by Dr. R. T. Payne, one on "A Case of Extra-Uterine Pregnancy of Sixteen Years' Standing," by Dr. R. F. Lewis, and, finally, some cases by Dr. H. O. Hyatt, one of which is entitled "Functional Derangement of the Reproductive Organs," and contains a choice bit of speculative pathology, prefaced by the expression, "Now let us see if we can't *hammer out* the pathology of this case." And it is hammered out, with a vengeance!

ART. III.—*A Treatise on the Pneumonic Aspiration of Morbid Fluids, etc.* By Dr. GEORGES DIEULAFOY, of Paris. 12mo, pp. xvi.–394. Philadelphia: J. B. Lippincott & Co., 1873.

IT appears that this work is a translation from the French, although it does not appear who the translator is. As set forth in the "General Outline," it gives a sketch of aspiration in general, the methods of the withdrawal of liquids from cavities in any part of the body, and a description of the different forms of instruments.

The work gives a very good account of the methods of aspirating morbid deposits from different parts, showing the innocuousness of the operation even in strangulated hernia.

The following suggestion, occurring on page 33, it may be well to bear in mind:

"I consider it a grave error to empty at one operation ovarian cysts, cysts and abscesses of the liver, the pleural sac, or large purulent collections in the cellular tissue; it is necessary to know when to stop, to proceed slowly, with patience, without producing shock, to perform five, ten, twenty, or a hundred aspirations; these are the true conditions of success."

The instrument has already been used sufficiently in this country, as well as in Europe, to establish its value. In many cases it is indispensable for the life of the patient, and may be considered one of the most remarkable inventions of the age made use of by the profession.

We recommend the book to accompany the instrument, and also consider it useful in the hands of those not possessing the aspirator.

ART. IV.—*The Diseases of the Prostate, their Pathology and Treatment; comprising the Jacksonian Prize Essay for the Year* 1860. By Sir HENRY THOMPSON, F. R. C. S., etc. Fourth edition, 8vo, pp. xxiv.–355. Philadelphia: H. C. Lea, 1873.

THE name of Sir Henry Thompson is sufficient to stamp any work on diseases of the urinary organs with authority, and we may say that the present edition will help to maintain the reputation the author has gained by its predecessors. The changes observed are mostly those pertaining to the treatment of the various affections; instead of being enlarged, the work is somewhat condensed, which in our opinion does not detract from its value; indeed, we are not conversant with a more complete and valuable treatise on the subject.

We cannot help expressing a little surprise, however, in view of all the literature on the subject, that no allusion is made to the use of the aspirator in relieving the retention of urine in impassable stricture from enlarged prostate. The old method of puncture with the trocar through the rectum and over the pubis is discussed as formerly. We also regret that no mention is made of Dr. Squire's vertebrated catheter, and its relative merits. Gouley[1] makes mention of the instrument, but appears to have formed no opinion as to its value.

There are thirteen plates (including many figures, illustrating the different conditions of the prostate), some of which are very good.

ART. V.—*On the Treatment of Diseases of the Skin: with an Analysis of Eleven Thousand Consecutive Cases.* By Dr. McCALL ANDERSON, of Glasgow, etc. 8vo, pp. iv.–84. Philadelphia: H. C. Lea, 1873.

THIS little work is useful in giving an idea of the relative frequency of the various cases of skin-affections as they are presented in practice, and gives a condensed account of treatment, which is more suggestive than exhaustive as regards details. The measures recommended seem quite judicious as a whole, and are useful for hasty reference.

Diseases are classified as "A, Functional; and B, Organic." The latter are subdivided into "I. Those defined by uniform causes; II. Those not defined by uniform causes." The former are arranged under the heads of—"1. Parasitic affections; 2. Syphilitic affections; 3. Strumous affections; 4. Eruptive fevers." The latter subdivision comprises "all affections of the skin not included in any of the preceding groups, and are arranged pathologically under three heads, namely: 1. Inflammations; 2. New formations; 3. Hæmorrhages."

Dr. Anderson regards many affections as depending upon constitutional conditions which Tilbury Fox would ascribe wholly to local causes. Thus, warts are said to depend upon a strumous diathesis. Psoriasis is classified with the inflammations.

The work has already appeared in the pages of the *Medical News and Library.*

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[1] "Diseases of the Urinary Organs," 1873.

Art. VI.—*On the Mechanical Treatment of Disease of the Hip-Joint.* By Charles Fayette Taylor, M. D., etc. 8vo, pp. 62. New York: William Wood & Co., 1873.

The design of this little work seems to be principally to explain the method of applying the author's instrument for diseased hip-joint, and to describe the same.

Dr. Henry G. Davis is accredited with the honor of first applying the principle of counter-extension with locomotion. The author criticises extension by means of the weight and pulley, as well as Sayre's and all other apparatus, as being insufficient in difficult cases. He thinks tenotomy is *usually* unnecessary, however much the limbs may be distorted, but by applying his instrument the contraction of the muscles may be overcome, and the limb be thereby gradually straightened. No other splint, it is said, than the one described, can accomplish this.

We have had no personal experience with the use of the author's apparatus, and are not disposed to judge of its supposed merits. One point in the book worthy of notice is the recommendation of early treatment, and that it be continued until recovery is complete. The necessity of opening abscesses as soon as formed is mentioned.

Books and Pamphlets Received.—Treatise on the Diseases of the Eye, including the Anatomy of the Organ. By Carl Stellwag (von Carion). Translated from the fourth German edition, and edited by D. B. St. John Roosa, M. D., Chas. S. Bull, M. D., and Charles E. Hackley, M. D. Fourth revised and enlarged edition. New York: William Wood & Co. 1873.

A Practical Treatise on the Diseases of the Ear, including the Anatomy of the Organ. By D. B. St. John Roosa, M. A., M. D., Professor of Diseases of the Eye and Ear in the University of the City of New York, Surgeon to the Manhattan Eye and Ear Hospital, etc., etc. Illustrated by Wood Engravings and Chromo-lithographs. New York: William Wood & Co., 1873.

Evidences of Life in the Newly-delivered Child. By W. B. Atkinson, M. D., Physician to the Department of Obstetrics and Diseases of Women and Children, Howard Hospital, Philadelphia, etc., etc. Reprinted from the *Medical and Surgical Reporter* for November 1, 1873.

Transactions of the American Medical Association, vol. xxiv. Philadelphia: Printed for the Association, 1873.

Nitrate of Amyl in the Treatment of Spasmodic Asthma and Acute Bronchitis. By Daniel H. Kitchen, M. D. Reprinted from the *American Journal of Insanity* for October, 1873.

The Retrospect of Medicine. Edited by W. Braithwaite, M. D., and James Braithwaite, M. D. Vol. lxvii., January–June, 1873. London: Simpkin, Marshall & Co., 1873.

Essays on Diseases of Children. By William Henry Day, M. D., Physician to the Samaritan Free Hospital for Women and Children. London: J. & A. Churchill, 1873.

St. George's Hostpital Reports. Edited by John W. Ogle, M. D., F. R. C. P., and Timothy Holmes, F. R. C. S. Vol. vi. 1871–'72. London: J. & A. Churchill, 1873.

Report on the Diseases of Indiana for the Year 1872. By George Sutton, M. D., Aurora, Indiana. Reprinted from the Proceedings of the State Medical Society.

Translations.

Nutritious Injections: a New Method of nourishing Patients by the Anus.—M. Leube has had the idea of rendering the digestion in the large intestine very active by carrying into this organ, simultaneously, digestible substances and a substance which is digestive. The pancreas of the hog constitutes the latter. The mass to be digested is made in the following manner: Fifty to one hundred grammes of the pancreas of the hog or ox, carefully deprived of its fatty tissue, are chopped fine and mixed with one hundred and fifty to two hundred grammes of beef. The two substances are pounded in a mortar with warm water, a magma being formed which is injected by means of a syringe, the nozzle of which is of large calibre. The injections thus composed have given good results with dogs. A fecal mass is formed after the injections which is quite analogous to the ordinary matters; the fat and the albumen are digested by the large intestine. This method of nutrition has been applied by the author to two patients. In one case there was a cancer of the upper portion of the digestive tube, in the other the patient could not receive any aliment without rejecting it by vomiting. In these cases the pancreatic substances did not cause any diarrhœa; they remained in the intestine for from twelve to thirty-six hours without producing any evacuations, and the patients did not experience any pain. After the injections the stools became more full; but at first the injections were not entirely retained, the patients rejecting a part of the injected mass undigested. This *mélange* is, according to the author, superior to all the substances which are recommended for nourishing by the large intestines.—*Gazette Hebdomadaire* and *La Tribune Médicale*, No. 266, 1873.

Picric Acid as a Reagent for Albumen.—Dr. Gulippe, in a communication to the *Gazette Médicale de Paris*, 1873, states that picric acid is the most sensitive reagent for albumen. Most of the other reagents which are at present employed require so much care and experience that mistakes are readily made. Boiling the albumen is quite certain, it is true, but it is in all cases necessary to first ascertain that the fluid is not alkaline. If, on the other hand, too much acid be added, albumen is dissolved by the heat. Nitric acid is now very generally used, but it decomposes the urates at a low temperature, and uric acid is deposited and is only redissolved by warmth. Every one knows, besides, that nitric acid at a high temperature changes, with the greatest facility, albumen into anthoproteic acid, which is readily dissolved when present in slight quantity or the acid is greatly in excess. Polarimeters are too troublesome in general hospital practice, and are by no means accurate when there is but a small quantity of albumen present. Gulippe has now used picric acid for several years, and places it above all other reagents. Neither boiling nor acidulated fluids are necessary, and the yellow color affords superior assistance in detecting the slightest trace of albumen. He generally employs a saturated aqueous solution. Fluids which contain but a slight quantity of picric acid are capable of detecting albumen even when there is but little of the latter present. In normal urine the solutions never occasion precipitates. An excess never redissolves the precipitates, and the *technique* is very simple. A few grammes of picric-acid solution are placed in a test-tube; a few drops of the fluid to be tested are then to be carefully added. If albumen be present in the fluid, a characteristic white streak is

produced between the fluids. One is thereby enabled to demonstrate the presence of slight quantities of albumen, and the least experienced are not exposed to error.—*Norsk Mag. fur Laegenidenskaben*, No. 9, 1873.

Treatment of Inflamed Hæmorrhoids in Parturient Women.—A number of remedies have been advised for this condition, which presents a certain gravity, especially in nervous women. Most of these are, unfortunately, inefficacious. Leeches to the tumors, or their incision, are not without danger, and only afford a transient relief. Ointments, liniments, suppositories, and the like, produce but little effect on the inflamed vessels, and yet the patient must be relieved from her insupportable pains. A small piece of ice is to be placed in a little bag of rubber or gold-beater's skin, and applied to the tumor. The ice is to be replaced as fast as it melts. It is very rarely that at the end of an hour or two the pain is not very much diminished. The treatment may be continued for a part of the day and repeated the next, but care should be taken to envelop the bag with fine moist linen, so as to render the application less direct. It is also necessary, when about to discontinue the refrigeration, to let the ice melt completely, and permit the water to attain the temperature of the bed, to prevent a reaction which might reinduce pain.—*Gazette de Joulin* and *La France Médicale*, September, 1873.

Observations demonstrating the Length of Time Life may be supported by Injections.—Dr. Runze has reported a case in which the patient could not, for fifty-nine days, swallow any food (liquid or solid), and was nourished by means of injections containing the yolks of eggs, broths, soups, etc. During the first week, the patient became weak and complained of a painful sensation of thirst; the third week the patient did not experience any hunger, thirst, or pain. There were but slight evacuations. The eighth week, however, an inflammation of the large intestine was set up, and death took place during the ninth week.

Had it not been for the occurrence of the proctitis, which might, perhaps, have been controlled by suitable treatment, there might have been some hope that the patient would have lived several weeks longer. The fact remains, however, that the patient was nourished fifty-six days by nutritious injections, and the absence of prolonged emaciation sufficiently proves the absorption of the substances placed in contact with the mucous membrane of the large intestine—*Gaz. Hebdom.* and *Trib. Méd.*, No. 266, 1873.

Subcutaneous Injections of Morphine in Strangulated Hernia.—Dr. Alois Szatzary, after having injected several drops of a thirty-per-cent. solution of morphine over the course of the inguinal canal, was able, after a few attempts at taxis, to readily reduce the hernia without operation.—*Algem. Wien. Med. Zeit.* and *La Trib. Méd.*, No. 266, 1873.

A Variety of Paralysis of the Radial Nerve.—Dr. Panus, having noticed numerous cases of idiopathic paralysis of the radial nerve, has become convinced that, instead of considering rheumatism or a damp cold as their cause, as is generally supposed, they are produced, for the most part, by a temporary pressure on the nerve. From the report of the seventeen cases, fourteen of which occurred in his own practice, Dr. Panus deduces the following conclusions:

1. In the great majority of cases, not to say always, idiopathic paralysis of the radial nerve is caused by a slight and temporary compression of the trunk of the nerve.
2. This compression invariably acts on the portion of the nerve which becomes superficial, and rests on the resisting surface of the humerus; from this the exact limits of such paralysis may be defined.
3. The agent of compression is represented by the weight of the body, or of that of the head resting on the arm as a pillow.
4. The prolonged decubitus on this side is an indispensable cause in the production of the paralysis.
5. This occurs almost always when the sleep is profound.
6. Intoxication and great fatigue act in the same way as lethargic sleep, and thus favor the production of the paralysis.
7. It is possible that, at first, the cause, that is the com-

pression of the nerve, may not be recognized, as the paralysis is sometimes very slowly developed.

8. We have never, as yet, met with a single case referable to cold, and we have examined more than thirty cases.

9. The anatomy, the pathological physiology, as well as the etiology and symptoms of this paralysis, compared with the paralyses from a mechanical cause, all, in a word, concur in assigning it a place among the latter.

10. Cold and rheumatism cannot serve to explain the peculiarities offered by this paralysis, while all are readily explained by admitting compression as a cause.

11. Electricity cures this paralysis always and quite rapidly, which proves that the compression of the nerve is neither great enough nor sufficiently prolonged to produce any alteration. The preservation of the electric contractility demonstrates the same thing.—*Arch. Gén. de Méd.*, June, 1873.

Nitrate of Mercury in Periodical Uterine Hæmorrhages.—Dr. Joulin has for some time treated the periodical hæmorrhages, which occur between the catamenia, by means of the acid nitrate of mercury, which he applies to the cervical canal by means of a rod of glass moistened with the medicinal fluid. The effect is incontestable, and the new method causes neither pain nor accidents. It is necessary, however, to make a vaginal injection at once, without which there would be severe and persistent smarting. If the cervical canal is contracted, a preparative dilatation is to be made. If the rod does not hold a sufficient quantity of the nitrate, Joulin uses a steel rod on which a little cotton is wound. The little tampon, after having been well moistened with the nitrate, is carried into the cervical canal and then quickly removed. Joulin asserts that he has hardly ever failed in his object by this method, and that he has thus cured hæmorrhages of long duration which had proved rebellious to other modes of treatment. Good results have also been attained in persistent leucorrhœas.—*Jour. de Joulin* and *Gaz. Med. Ital. Lombard.*, No. 35, 1873.

Miscellany.

Appointments, Honors, etc.—Dr. Edward S. Dunster has been appointed Professor of Obstetrics in the University of Michigan. Amherst College has bestowed the title of LL. D. on Dr. Nathan Allen. Dr. John Byrne has resigned his professorship in the Long Island College Hospital, Brooklyn, N. Y. Charles A. White, State Geologist of Iowa, has been elected the Josiah Little Professor of Natural History in Bowdoin College, to fill the vacancy caused by the resignation of Prof. Goodall. Dr. J. William White has been elected Resident Physician of the Eastern Penitentiary, Pennsylvania, in place of Dr. Bullard, resigned. Dr. O. F. Wadsworth has been appointed Ophthalmic Surgeon to out-patients at the Massachusetts General Hospital. Dr. H. H. A. Beach has been elected President of the Boylston Medical Society of Harvard University. Dr. Richard Cowling has been elected to fill the chair of Principles and Practice of Surgery in Louisville College, made vacant by the death of Dr. Bayless. The New Hampshire Legislature has appropriated $5,000 to complete the renovation of the medical building connected with Dartmouth College. James Johnston, of Indianapolis, has endowed the Medical College of the Northwestern Christian University (Indiana) with half a million dollars, and a site for its location. Dr. Boll, private teacher and assistant in the Physiological Laboratory of Berlin, has been appointed Professor of Comparative Anatomy and Physiology in the University of Rome. Dr. Sharpey, of London, had recently a narrow escape from death, caused by taking inadvertently a solution of atropia for quinine. It is reported that Mr. Jonathan Hutchinson has sent in his resignation as surgeon of the London Hospital, a post he has held for the last ten years. Dr. Robert Druitt has been elected a Fellow of the Royal College of Physicians.

The American Public Health Association.—The second annual meeting of this Association was held in this city, November 11th. The President, Dr. Stephen Smith, opened the meeting by a brief address, setting forth the importance of the work undertaken by the Society, and the results that might justly be anticipated. The meeting was then addressed by Dr. Beekman and Dr. Billings, U. S. A. Dr. Nathan Allen, of Lowell, Mass., read a paper on the Law of Longevity. Dr. Edward James, of Dorchester, Mass., read a paper on the Power of the House-keeper over the Health of the Family. Dr. James E. Reeves, of Wheeling, West Virginia, spoke of the causes of bad health in American women. A paper on the Relation of Architecture to Health was presented by Carl Pfeiffer, Esq. Dr. White, of New Orleans, submitted memoranda of the history of cholera in New Orleans and throughout the Southwest. Dr. McClelland, U. S. A., read a paper on Cholera in some parts of Kentucky; and was followed by Dr. J. H. Vandieman, Health Officer of Chattanooga, who described the progress of the same disease in Tennessee. Papers were read by the following gentlemen: Ezra M. Hunt, M. D., of New Jersey, on Sanitary Organization in Villages and Rural Districts; George M. Beard, M. D., on Electricity and Ozone, and their Relations to Health and Disease; Dr. Harris, for Dr. Henry Hartshorne, of Philadelplia, on the Prevention of Yellow Fever; James J. O'Dea, M. D., on the Vital Statistics of Staten Island; Charles F. Chandler, M. D., on the Water Supply of Towns and Cities; and Dr. Vanderpoel, on Quarantine.

Dr. Harris acknowledged the receipt of interesting papers, too late to be read, from Dr. Logan, of Sacramento; Dr. Hickman, Health Officer of Hannibal, Mo.; Dr. Neil, of Dayton, Ohio; Dr. Bacon; Dr. Jones, of Louisville, Ky.; Dr. Baker, of Davenport, Iowa; Prof. Jerome Corkoran; and Dr. Erskin, of Memphis, Tenn. Also letters expressing sympathy with the cause, and regrets at their inability to attend the conference, from Dr. Jones, Chief of the Bureau of Medicine and Surgery, and General Myer, Chief Officer of the Signal-Service Bureau. In conclusion, Dr. Harris stated that communications had been received from nearly all the States, Mississippi being, he believed, the only State that had not been represented in some way at the conference. The Association then adjourned, to meet in Philadelphia on the second Tuesday of November, 1874.

Death from the Inhalation of Ether.—Our English brethren seem to have bad luck with anæsthetics. They are just beginning to appreciate the greater safety of ether as compared with chloroform, but a discouraging accident occurred, October 4th, at the South Hants Infirmary, Southampton. The patient, a lad of fourteen years, was put under the influence of ether for operation on the eye. Just before the operation, the pulse was felt to falter. The inhalation was discontinued, the pulse recovered, and the operation was performed without further inhalation. Directly after the operation, the pulse and respiration ceased simultaneously. Restorative means were resorted to, and at first with some success, but in a few minutes the boy was dead. The *post mortem* revealed nothing. The ether was administered by means of a cone. The quantity used is not stated, nor is any allusion made to its quality.

Hartford Insane Retreat.—The Forty-ninth Annual Report of this institution, for 1873, contains seventy pages of interesting and valuable statistical information. Since the publication of the Report of 1868, radical reconstruction has taken place in the buildings. The first patient was received into the Retreat April 1, 1824. The number of patients in the Retreat, March 31, 1870, was 134; admitted since, 372. Of this number there have been discharged recovered, 147; much improved, 47; improved, 66; not improved, 43; died, 55. Total discharged, 358. Remaining at the Retreat, April 1, 1873, 148. Whole number admitted up to April 1, 1873, 5,522. Whole number discharged during the same period, 5,374. Whole number remaining, 148. Average number for the three years, 147. Medical officers: James H. Denny, M. D., Physician and Superintendent; James H. Whittemore, M. D., Assistant Physician; Walter J. Norfolk, M. D., Junior-Assistant Physician.

New York Medico-Legal Society.—At the last meeting of this Society, the following officers were elected: President, Clark Bell, Esq.; First Vice-President, John C. Peters, M. D.; Second Vice-President, C. P. Daly, Esq.; Recording Secretary, George W. Wells, M. D.; Corresponding Secretary, J.

F. Chauveau, M. D.; Treasurer, T. S. Bahan, M. D.; Librarian, R. S. Guernsey, Esq.; Curator and Pathologist, P. E. Donlin, M. D.; Chemist, R. O. Doremus, M. D.; Assistant Recording Secretary, M. N. Miller, M. D.; Trustees, William A. Hammond, M. D., S. Rogers, M. D., and T. C. Finnell, M. D.

Yellow Fever.—Recent reports from Memphis announce the end of the terrible visitation of yellow fever in that city, but the amount of suffering and destitution that it has caused will not be relieved for many months to come. From the outbreak of the fever, September 14th, to October 25th, more than a thousand deaths had been recorded. There is said to be no instance of the spread of the disease to persons living in surrounding towns and villages, though many of those who fled from Memphis, affected with fever, died elsewhere themselves.

The New Missouri Medical College.—The Faculty of the New Missouri Medical College in St. Louis is composed of the following gentlemen: Dr. J. S. Moore, Dean of the Faculty, and Professor of Principles and Practice; Dr. Montgomery, Professor of Materia Medica; Dr. Curtman, Chemistry; Dr. Maughs, Obstetrics; Dr. P. G. Robinson, Physical Diagnosis; Dr. A. P. Lankford, Surgery; Dr. Bauduy, Nervous Diseases; Dr. Tuholske, Anatomy; Dr. Michel, Histology and Ophthalmology; Dr. Todd, Lecturer on Diseases of the Throat and Ear.

A Hopeful Sign.—The Connecticut State Medical Society, recognizing the importance of a good education as the foundation of a successful study of medicine, has taken measures to raise the requirements for candidates for the degree of M. D. A Board of Censors has been appointed, whose business it will be to examine candidates for admission to the Medical School, and it is probable that by another year something more than a mere common-school education, and a certificate of good moral character, will be required.

Medical Beneficiaries.—The Trustees of the Louisville (Kentucky) Medical College have created a number of beneficiary scholarships for the benefit of poor but deserving young men desiring a medical education. One beneficiary student is received from each Senatorial District of any State, and one from each Congressional District of the different States. The value of each scholarship is two hundred dollars. The recipients will be known only to the Dean of the College.

The Perils of Irish Hospital Practice.—The English medical journals give the particulars of an attack made on Dr. George Johnston, Master of the Rotunda Lying-in Hospital, Dublin. The assistant, one Mulvany, fancied that his wife, a patient in the hospital, was neglected, and, becoming noisy in the ward, was ordered out by Dr. Johnston, whereupon Mulvany attacked the doctor violently with a poker, cutting his temples and dislocating one of his fingers.

The New York Laryngological Society.—The object of this Society is the monthly association of professed laryngoscopists of New York and vicinity, for the "promotion of the study of affections of the larynx, pharynx, and adjacent parts." The officers are: President, Dr. Robert F. Weir; Vice-President, Dr. Clinton Wagner; Secretary, Dr. Woolsey Johnson; and an Executive Committee composed of Drs. Morris J. Asch, Charles McBurney, and Beverly Robinson.

A New Medical Society in Pennsylvania.—On the 19th of August last, a medical society was organized in the rather sparsely populated counties of Elk, McKean, Potter, and Cameron. The following officers were elected: President, W. H. Delong; Vice-Presidents, W. J. Coagin and T. S. Hartley; Secretary, J. T. Lanning; Treasurer, S. S. Smith; Orator, L. Balfour.

Medical Students in London.—The total number of students pursuing medical studies at the eleven metropolitan hospitals of London, as shown by the registration which closed October 15th, is sixteen hundred and eight. This is an increase of one hundred and ten over the registration of last year. The attendance at the provincial schools throughout Great Britain is also larger than usual.

Medical Association of the District of Columbia.—At the semi-annual meeting of this Association, held October 7th, Dr. F. Howard was elected President, to fill the vacancy occasioned by the death of Dr. Thomas Miller. Dr. William G. Palmer was elected Vice-President, to fill the vacancy occasioned by the election of Dr. Howard to the office of President.

The Medical Society of Wheeling.—At the last meeting of this Society, the following officers were elected for the ensuing year: President, Dr. E. A. Hildreth; Vice-President, Dr. James Cummins; Secretary, Dr. S. L. Jepson; Treasurer, Dr. J. C. Hupp; Censors, Drs. John Frissell, W. J. Bates, and R. W. Hazlett.

Sanitary Condition of Staten Island.—In the *Richmond County Gazette* of September 17th there appears an elaborate report, by Dr. James J. O'Dea, to the Board of Health of the county, of the "Sanitary Condition of Staten Island," containing some suggestions as to the the abolition of many public nuisances highly obnoxious to the welfare of the community.

The Archives of Scientific and Practical Medicine.—Dr. Brown-Séquard announces that the success of this journal has not been such as to warrant its continuance, and that its publication will therefore cease with No. 6, which will complete the volume. It is much to be regretted that a journal of such excellence should not meet with adequate support by the profession.

An Egyptian Hospital.—It is announced that the Khédive of Egypt is about to construct a hospital at Emirghian, on the Bosporus. The institution is intended to be a model one of its kind. The women are to have a pavilion separated from the men, and the plans provide for the complete isolation of one of the wards—that for contagious diseases—without interfering with the working of the rest of the establishment.

Medical Society of Chautauqua County, N. Y.—At the annual meeting, held at Dunkirk, N. Y., July 8, 1873, the following officers were elected for the ensuing year: President, Dr. A. Waterhouse, Jamestown, N. Y.; Vice-President, Dr. S. M. Smith, Dunkirk, N. Y.; Secretary and Treasurer, Dr. T. Charles Wilson, Portland, N. Y.

Geographical Puzzle.—The London *Medical Times and Gazette* of October 25th gives the following curious piece of news: "The fever in Memphis, New York, has so much subsided that the quarantine restrictions have been removed."

The Cholera in Berlin.—Up to October 13th, 938 cases of cholera had been reported at Berlin since the breaking out of the epidemic. Of these, 628 were fatal, 223 recovered, and 87 remained under treatment.

Bloodless Operations.—The *Lancet* of October 11th gives the following description of a plan that has recently been adopted by Prof. Esmarch, and introduced into England by Mr. William MacCormac, of St. Thomas's Hospital, for preventing the loss of blood during operations on the distal portions of the extremities:

The method is not exactly new, and was practised by Stromeyer and Langenbeck twenty years ago, and more recently by an Italian surgeon named Silvestri. The details are as follows: An elastic bandage, about two inches and a half in width and from five to ten yards long, is firmly bound round the limb, commencing at the toes or fingers, as the case may be, and is then continued upward so as to drive the blood before it out of the veins and arteries. When the desired point has been reached, a strong India-rubber band, about half an inch in diameter, is tightly drawn two or three times round the limb just above the elastic bandage, and fastened by hooks. The bandage is then removed, leaving the tissues blanched and exsanguined. Not a particle of blood is lost during the operation, which is really more bloodless than when performed on the dead subject. After the operation is completed, the rubber rope is removed, and the blood then finds its way into the vessels, which are ligatured or twisted, according to the taste or inclination of the surgeon. On this plan, which has been carried out at St. Thomas's, Guy's, and St. Bartholomew's Hospitals, London, many operations have now been performed, including excision of the knee and elbow joints, amputations, and the removal of dead bone; and Mr. Wagstaffe has recently amputated through the thigh for gangrene of the foot, on this plan, the precaution having been taken to commence the application of the elastic bandage several inches above the mortified part. No ill effects of any kind have hitherto been observed from the use of this contrivance. Although the durations of the operations have varied from a few minutes up to half an hour, and even more, during the whole of which time the circulation has been completely arrested, no evidence has been afforded of the formation of emboli or thrombi in any of the cases. But it is one of the possible evils of the device that the prolonged pressure on the vessels and complete stoppage of circulation may, under certain conditions, lead to the formation of a clot, which, on the reëstablishment of the circulation, may be carried along the vessels, and arrested in some part of their course, giving rise to circumscribed inflammations or even gangrene. There is also considerable danger in applying the bandage over parts which are inflamed and suppurating, especially if decomposition be going on, lest some of the clots which are found in the blood-vessels of the affected parts be detached and forced into the blood-current. For such cases it would be well to employ in addition a modification of the plan which has been practised at Edinburgh for the last two or three years, and which consists in suspending the limb for some minutes before the operation, so that the blood may gravitate downward. Then the bandage may be applied at the proximal side of the diseased part, thus avoiding all risks of septic poisoning or of embolism.

As to the condition of the limb on the removal of the rubber rope, it may be remarked that the blood shows itself at the wound in some cases immediately, and in others not for several seconds, or even a minute afterward. The part then rapidly becomes very red, of a slightly livid hue, and somewhat swollen; which may be accounted for by the small vessels and capillaries becoming engorged before the *vis a tergo* is sufficiently restored to drive the blood up into the venous column.

Mr. Erichsen, in a letter to the *Lancet*, desires to present the claims of Mr. Clover to some share in originating this method of operating, and he describes a case operated on June 9, 1852, by Mr. Clover, in which the limb was raised, and a narrow bandage was applied very tightly from the toes nearly to the perinæum; a screw tourniquet, without any compress, was then applied immediately above the bandage. The bandage was then unrolled from the thigh, and the limb removed by antero-posterior flaps, the bone being divided about two inches below the trochanter minor. Scarcely any blood was lost, and the patient made a rapid recovery.

Death from the Sting of a Wasp.—Wm. Odell, M. R. C. S., of Hereford, records the following case in the *Lancet* of September 6, 1873: Thomas M——, aged seventy-four, a laborer, was brought to the infirmary about 10.45 on the night of August 19th, having been stung on his tongue by a wasp. It appeared that the patient was clearing up his plate after eating his supper, when he cried out that he had been stung, and something as fine as a hair was removed by his companion. The patient went to bed, but did not sleep, and in about an hour called his companion and complained of swelling of his tongue and difficulty of breathing. He was then brought to the infirmary.

On admission, nearly three hours after the occurrence, his tongue was very much swollen and quite tense; there was considerable swelling immediately below the chin, between that and the hyoid bone; respiration quick, but not particularly labored; pain referred to a point in the middle line of the tongue, about three-quarters of an inch from the apex. The patient could protrude his tongue, and answered questions quite distinctly. He said his companion had attempted to remove the sting, but did not think he had accomplished it. The tongue was examined with a lens, but no sting or mark of a sting was perceptible. The pharnyx was examined by the finger, and was apparently not obstructed by the swelling.

The patient was put to bed, and fomentations as hot as he could bear were applied to his throat. The part where he complained of pain, and where he said he had been stung, was brushed with liquor ammoniæ diluted so as to be borne by myself without much inconvenience when applied to my own tongue. Pulse 64, respiration 34, not particularly labored, and not strikingly laryngeal in character.

The patient seemed better for the fomentations and application of ammonia to his tongue, and expressed the comfort he felt, when suddenly, about half a minute after an application of ammonia, he was seized with spasm of the glottis, his face became pale, with drops of perspiration on the forehead, and his arms were thrown out as if to grasp for air (really to assist respiration by means of the pectoral muscles). He said, "I shall choke!" and got out of bed and stood upright, but with no improvement, for he sank on the bed again, his face became livid, he ceased to breathe, and his pulse stopped. With the ordinary scalpel in my pocket-case and a pair of dissecting forceps I immediately performed tracheotomy just below the cricoid cartilage, and thrust in my forceps and kept the blades open by inserting my finger between them. Artificial respiration was set up, and the trachea kept open and free from blood, as well as could be done with only one nurse and a porter to assist; and the patient breathed through the opening. As soon as possible I fetched a tracheotomy tube and inserted it into the trachea. Notwithstanding that artificial respiration was kept up and galvanism applied to the cardiac region, the patient died just before the arrival of Dr. Woodhouse, having breathed about four times after tracheotomy was performed, and having been in the infirmary less than half an hour.

Post-mortem Examination.—For his age he was an exceedingly muscular man and well nourished. *Rigor mortis* very great fourteen hours after death. The tongue was very much swollen, and there was a bluish mark at the edge, about half an inch from the apex (on the left side), which, if present, had quite escaped my search with the lens on his admission, but would correspond with the situation from which (at the inquest) his companion said he had removed the sting. Before hearing this evidence I had concluded it must have been caused by the forceps used in pulling the patient's tongue forward when the paroxysm first seized him, and was supported in my conjecture by two of the medical officers of the infirmary and one other surgeon present at the *post mortem.* Pharnyx not much if at all swollen. The epiglottis and glosso-epiglottidean folds were so œdematous as to look like one large bladder. Rima glottidis quite closed by œdema. Sacculus laryngis obliterated, and only marked by a line where (owing to the excessive œdema) the true and false vocal cords met; below this the trachea was perfectly healthy. Bronchi healthy. Both lungs were emphysematous; the right lung was a good deal congested, especially at lower lobe. Œsophagus and stomach healthy; no trace of wasp. Arteries atheromatous. Heart normal. Right kidney cirrhotic; small calculus in pelvis, which was dilated. Other organs healthy.

A Heart with Five Cavities.—An inquest was held in London, September 16th, on the body of Maria Smith, aged thirty, who died under the following peculiar circumstances: It appeared from the evidence that deceased, whose real name was

Phillips, resided at 12 Union Court, Westminster. On Friday last, deceased, who had long complained of her heart, called a neighbor to her room, who, seeing deceased was evidently in a dying state, called for further assistance, and sent for a medical man, but before his arrival she exclaimed, "I am dying!" and fell on her right side, dead. Mr. George Fenton, 28 Great Smith Street, Westminster, remarked to the coroner that this was a case of peculiar interest, as there was only one other similar case recorded in medical annals known to him. On Friday he was called to see deceased, whom he had known by sight for about twelve months, and found her lying on the bed, warm, but dead. He had since made a *post mortem*. On examining the thorax he found the lungs slightly congested, and on separating the heart from the lungs he found the pericardium adherent over the whole surface. In carefully dissecting it off, he found a most extraordinary formation—viz., five cavities. The extra cavity was anterior to the left ventricle, and communicating with it by two small holes. One was just below the semi-lunar valves, and was tendinous all round, and smooth and shining; the other was more at the apex of the ventricle, rather larger than the superior one, and was covered with a valve somewhat similar to the other valves of the heart. The heart was in a most abnormal condition, being almost three times the ordinary size, weighing twenty-three ounces. There was a small fibrinous clot in the extra cavity, and the valves on the right side were inflamed and thickened. The liver was soft, and weighed one pound heavier than it ought to have done. The kidneys were small and much congested, and the capsule was very loose. No doubt the condition of the heart had caused death. The jury, after a few remarks, returned a verdict of death from natural causes. In a note received from Mr. Fenton, he adds: "I have no doubt at some time or other it was a true aneurism of the heart, but the woman having had acute inflammation of both pericardium and endocardium, and the former being adherent at the time the walls of the ventricle were ruptured, saved the life of the woman. I may further state that the size of the cavity was somewhat larger than the ventricle, and the anterior wall was wholly tendinous and smooth.—*Medical Times and Gazette.*

German Savants at a Drinking-Festival.—At the recent meeting of the German Association for the Advancement of Natural Sciences and Medicine, the last evening seems to have been devoted exclusively to conviviality, and is thus described by the correspondent of the *Medical Times and Gazette:*

"The *Festtrunk*, which began at half-past seven, proved to be the climax of the proceedings. The *Festtrunk*, or drinking-festival, was held on the invitation and at the expense of the town of Wiesbaden, who crowned the hospitality with which they received and entertained their guests with a banquet in a style at once really splendid and thoroughly German. The wine, we need hardly say, was from the Rhine, and from the Rhine only; and so wonderful was its quality that the most accomplished connoisseur was loud in its praises, and vowed that he would never forget the 1868 Rauenthaler Pfaffenberg from the cellar of Manskopf-Sarasin in Frankfort-on-the Maine. The supply of wine was unlimited, and its effect was speedily manifest. The conversation became louder and more animated every moment; the *Anstossen* of the wine-glasses ever merrier and more frequent. The well-known demonstrative affection of the Germans became increasingly conspicuous; and—forgive them, *Gott Bacchus!*—the flavor of the Rhenish nectar was soon lost in a universal cloud of tobacco-smoke. Many a bond of eternal friendship taken in the old student-days was now renewed, and many a fresh one formed; and this among men of every age—from the youthful practitioners and *Naturforscher* fresh from the late war, where they had labored side by side, to the aged *Philosophen* and *Kliniker*, who may first have met at the foundation of the society more than fifty years ago. At short intervals a toast was given by some of the more eloquent of the company, who acquitted themselves, as a rule, in the most happy style, receiving due honor from the guests who drank with equal heartiness and good-will 'Confusion to the Jesuits!' and 'Long life to our cousins the monkeys!' Even more acceptable, if possible, to the company, and certainly more striking to a stranger, were the frequent songs—not from one voice but from a thousand, accompanied by a military band. Each guest was presented with a song-book for the occasion, and the "Gaudeamus," the 'Lorely,' etc., were rendered in the very best student-fashion. But the crowning piece of all was that verse in the 'Rheinweinlied' where the whole company, with a peculiarly mixed air of jovialty and seriousness, rose to their feet as one man, and sang in the full strength of their enthusiasm—

'Am Rhein, am Rhein, da wachsen unsre Reben;
Gesegnet sei der Rhein!'

"As we have said, the *Festtrunk* was truly the climax of the entire proceedings; and next day the majority of the visitors returned to their duties, refreshed in mind and revived in heart."

Treatment of Syphilitic Alopecia.—Dr. Balmanno Squire, in the *British Medical Journal* of October 4th, says of this disease: "That form of syphilitic alopecia which is independent of any eruption affecting the scalp, which accompanies the so-called secondary syphilides, and which is characterized simply by an extensive loss of hair, so that the greater portion of the scalp is denuded absolutely of hair, and not the scalp only, but also the eyebrows and eyelids (of eyelashes) as well, is often a persistent affection, and in my experience is only—very tardily, indeed—remedial by general (mercurial) treatment. I refer to the condition described above, as distinguished from the syphilitic alopecia, resulting commonly (in tertiary syphilis) from the limited and 'discrete' loss of hair resulting from the formation of cicatrices consequent on (tertiary) syphilitic ulceration of the scalp. This kind of alopecia, which has by some eminent French writers been assumed to be identical with tinea decalvans, but which is to be distinguished from any, even the most 'diffused' forms of the latter disease by its vague want of definite limitation of margin, is, as I have found, readily (within a month or so) curable by the following topical remedies:

"For the scalp: Hydrargyri iodidi rubri, gr. v; attar rosæ, ♏ij; olei amygdalæ, ♏x; unguenti simplicis, ℥j.

"For the eyebrows (where the skin is more tender), three grains of the mercurial iodide are used. The prescription is otherwise the same as before.

"For the eyelids, which are more tender still, five grains of the yellow oxide of mercury, made by the recent method, are substituted for the iodide. The prescription is otherwise as above.

"The French writers referred to regard secondary syphilis as merely a predisposing cause of tinea decalvans. I, however, regard the 'secondary' syphilitic alopecia as a distinct disease."

Hudson River State Hospital for the Insane.—A number of medical gentlemen visited Poughkeepsie, October 11th, for the purpose of inspecting this hospital. Every facility was afforded them by Dr. J. M. Cleaveland, medical superintendent, and the inspection was thorough and highly satisfactory. A meeting was organized on the spot, and Dr. David Linsly appointed chairman, Dr. C. M. Allin acting as secretary.

A committee of the following named gentlemen was selected to prepare resolutions expressive of the views of those present on the condition of the institution: B. W. McCready, M. D., Physician to Bellevue Hospital; Gurdon Buck, M. D., Surgeon to the New York and Presbyterian Hospitals; Thomas M. Markoe, M.D., Professor of Surgery, College of Physicians and Surgeons, New York; James M. Minor, M.D., Surgeon to Brooklyn City Hospital; D. Tilden Brown, M.D., Resident Physician, Bloomingdale Asylum; R. L. Parsons, M.D., Resident Physician, New York City Lunatic Asylum; S. Oakley Vanderpoel, M.D., Health Officer of the Port of New York; William H. Macy, Governor of New York Hospital and Bloomingdale Asylum.

The committee having retired for deliberation, presented the following resolution, which was unanimously adopted:

Resolved, That, having made a careful inspection of the building and grounds of the Institution, we believe that the soil and site, on high ground, commanding extensive and beautiful views, is one of the most desirable that could have been selected.

Obituary.

Dr. Thomas Miller, who died at his residence in Washington on the 20th of September, was born in Port Royal, Virginia, in 1806, and graduated at the University of Pennsylvania in 1829. He was a member of the American Medical Association from its organization, and frequently on important committees. In 1839 he was appointed Professor of Anatomy in the Columbian College, a chair which he filled for twenty years with distinguished ability. In 1859 he was elected *Emeritus* Professor of Anatomy and Physiology, and president of the Faculty, which position he occupied at the time of his death. He was foremost, in 1844, in establishing the Washington Infirmary. This institution was opened under the auspices of the medical faculty of Columbian College, since 1847 known as the National Medical College. He took great interest in public health; was for years an active member of the Board of Health of Washington, and much of the time its president. He was also for years in the City Council, and was a member of the Board of Aldermen. He attended regularly the meetings of the National Sanitary Quarantine Conventions, and in 1859 made a preliminary report on the "Internal Hygiene of Cities." He made the following contributions to medical history: "Biographical Sketch of the Professional Life and Character of Henry Huntt, M. D.," 1838; "The Case of the Late President W. H. Harrison," 1841; "Case of Retained Fœtus for Three Years," 1842; "Case of Colloid Tumor in the Cavity of the Cranium," 1845.

Sir Henry Holland, whose death has been recently announced, was born in 1788, and took his medical degree at Edinburgh in 1811. The greater part of his professional life was passed in highly aristocratic circles, and, although always a prominent physician, and an ornament to society, he contributed little or nothing to medical science, and his fame is due rather to his associations with royalty and nobility than to individual merit as a physician. His life was full of interesting events, many of which he has recorded in his "Recollections of Past Life."

Dr. Coste.—We regret to have to announce the death of Dr. Coste, a distinguished *confrère*, at his residence, near Gacé, Orne. Dr. Coste, who was in his sixty-sixth year, had been a pupil of Prof. Delpech, in conjunction with whom he visited this country (England) in 1832, in order to investigate the causes and conditions of cholera, then very prevalent. Dr. Coste was a professor in the College of France, and an inspector of coast and river fisheries. His loss will be greatly felt in the scientific world, which stood indebted to his graceful pen for many able and enduring productions.—*Lancet.*

William Hallowell, M. D., L. R. C. S., Edinburgh, Professor of Materia Medica, Trinity College Medical School, Toronto, died in that city, October 20th, in the sixtieth year of his age.

Dr. William Hyde, of Stonington, Connecticut, died in that city, September 25th. Dr. Hyde was widely and favorably known throughout New England as a skillful practitioner.

Dr. Samuel B. Beresford, for many years a prominent physician of Hartford, Connecticut, died in that city, October 13th, aged sixty-seven years.

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